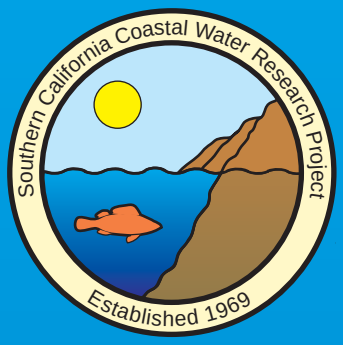
AGENDA
Nonpoint Source Tracking and Monitoring Council
February 16, 2006 10 am – 1 pm
Cal EPA Building,
Training Room 2 East and West
1001 I St., Sacramento
Conference Call # 916 255-4069

Meeting Objective: *The primary objective of this TMC meeting is to provide constructive input to California's Surface Water Ambient Monitoring Program (SWAMP) concerning nonpoint source water quality monitoring needs & activities to help address the recommendations coming from a recently conducted SWAMP program review. The Scientific Planning and Review Committee (SPARC) was convened to provide an external scientific review of SWAMP. A SPARC preliminary report contains recommendations for strengthening SWAMP, so this meeting is an opportunity for the NPS water quality community to review those recommendations and make suggestions.*

Item Time	Item Description	Lead
10:00 – 10:15	**Introductions** • Meeting Purpose • Introductions	Jeff Loux, Facilitator
10:15 – 11:00	**SWAMP-SPARC Presentation** • SPARC Recommendations • SWAMP Response Documents ➢ Communication Document ➢ Decision Making Process Document	Val Connor, SWRCB
11:00 – 12:00	**SWAMP-SPARC Document Discussion** • Comments, suggestions & activities to address nonpoint source water quality needs consistent with SPARC • Opportunities to incorporate NPS activities into SWAMP • TMC role with SWAMP	All
12:00– 12:30	**Round Robin Announcements** • Information Sharing – Bring Announcements	All
12:30 – 1:00	**Wrap up**	Jeff

Technical Report 473
December 2005

Preliminary Report of the Scientific Planning and Review Committee (SPARC)



A report from the SPARC Committee Members

Southern California Coastal Water Research Project

A PRELIMINARY REPORT OF THE SCIENTIFIC PLANNING AND REVIEW COMMITTEE (SPARC)

SPARC Committee Members

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Facilitated by:
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December 2005

Technical Report #473

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INTRODUCTION

This report presents the preliminary findings and recommendations of the Scientific Planning and Review Committee (SPARC) (Appendix 1), which was convened in response to a request from the State Water Resources Control Board to conduct an external scientific review of the Surface Water Ambient Monitoring Program (SWAMP). This review is part of the SWAMP's triennial external review and CalEPA's effort to assess and enhance the scientific validity and role of science in all agency programs. The SPARC was presented with a list of eight specific questions (Appendix 2) focusing largely on the technical aspects of study designs, sampling and laboratory methods, data analysis, and data dissemination. In addition, one question asked the SPARC to assess whether the SWAMP's current management structure was appropriate to its mission.

The SPARC heard presentations over a two-day meeting in October 2005 from SWAMP staff and representatives of other related programs, and then met in executive session on the third day to develop its preliminary findings and recommendations. Between October 2005 and March 2006, the SWAMP will consider the content of this preliminary report and develop its plan for addressing the recommendations. The SPARC will then reconvene on March 21 and 22 to hear the SWAMP's formal response to the recommendations. This response will include specific actions, timelines, and suggested benchmarks or performance measures by which the SWAMP's performance over the next two to three years can be assessed. The SPARC will then prepare a final report that will include the SWAMP's formal response and the SPARC's judgment of its adequacy. The final report will also contain additional material in response to the State Water Quality Control Board's request on December 9, 2005 for more specificity with regard to management actions the State and Regional Boards may take in support of the SPARC's recommendations.

Overview

The SWAMP's presentations in October 2005, as well as follow-up comments from the SWAMP Roundtable[1], showed clearly that the SWAMP has achieved notable successes at both regional and statewide levels. The SPARC was particularly impressed by these accomplishments, given the relatively small budget the program has to work with. However, the SPARC also believes the SWAMP is hampered by fundamental structural problems that must be addressed before decisions about appropriate technical approaches can be made.

These more fundamental problems stem largely from the disconnect between the broad scope of the program, envisioned in the November 2000 Report to the Legislature, and the program's actual capacity under existing funding levels. Thus, while the Report to the

[1] The Roundtable is the coordinating entity for the program. Participants include staff from the State and Regional Water Boards, the Department of Fish and Game, the Marine Pollution Studies Lab, Moss Landing Marine Laboratories, US EPA, contractors, and other interested entities.

Legislature estimated that the SWAMP would require from $59 million to $115 million per year, of which $44 million to $87 million represented new funding needs, the current fiscal year's program budget is $3.4 million. While the SWAMP has adjusted to accommodate available funding, such adjustments have been largely ad hoc in nature and the program's underlying mission and strategy have not been explicitly reevaluated. The SWAMP is thus still trying to achieve its original intent without the benefit of a planning exercise that fits current funding realities. Last February the SWAMP Roundtable began an internal program review to prioritize program objectives and develop an implementation strategy. This continuing exercise is an appropriate mechanism for responding to the SPARC's recommendations, but achieving these priorities will also require the support and involvement of higher management within the State Water Resources Control Board and the Regional Water Quality Control Boards.

Because of the importance of these structural issues, the SPARC shifted its charge to encompass a programmatic review of the SWAMP. The SPARC believes that many technical issues (e.g., study designs) cannot effectively be resolved until broader issues of program purpose and strategy have been addressed. The SPARC has expressed its willingness to remain involved with the SWAMP past the March 2006 deadline for this report in order to assist with further in-depth reviews of key technical issues. The challenges facing the SWAMP are not out of the ordinary. To the contrary, they are typical of such programs during their startup phase, which often encompasses five years or more. To its credit, the SWAMP began evaluating the SPARC's findings and implementing its recommendations immediately following the October meeting. Most of the SPARC's recommendations are consistent with the SWAMP Implementation Strategy that was recently accepted by USEPA.

The SPARC's recommendations, which are discussed more fully in the following sections, are:

Recommendation 1: Reevaluate the original program goals.
This effort should focus on defining SWAMP's role and authority relative to other programs, match responsibilities to available funding, and ensure that the program retains key elements of its entrepreneurial spirits.

Recommendation 2: Identify key target audiences.
Audiences and clients should reflect the updated program goals, include those with both regional and statewide responsibilities, and expand from existing relationships.

Recommendation 3: Develop and implement a programmatic communications strategy.
The program should produce signature information products that address client needs and are based on program goals.

Recommendation 4: Develop a statewide assessment framework.
The assessment framework should flow from program goals, prioritize management questions, and be implemented through a monitoring design that enables a balance between regional and statewide issues.

Recommendation 5: Take more advantage of available resources.
The program should leverage its own funds by coordinating with other programs, seek external review on a regular basis, and evaluate other programs that can provide useful models for various aspects of the program.

Recommendation 6: Realign program management and decision making with the revised program goals.
The modified management structure should balance collaborative decision making with the need for overall statewide direction and should include specific procedures for managing key processes.

SWAMP BACKGROUND AND HISTORY

Before SWAMP was created, ambient monitoring and special studies conducted by the State and Regional Boards generated valuable data that resulted in a tremendous increase in knowledge about ambient water quality. This information enabled the Water Boards to identify a number of serious water quality issues and make progress in addressing them. However, with limited resources, the individual regions focused primarily on understanding their local watersheds, solving problems, and responding to litigation. Despite a large amount of anecdotal information, it is difficult to systematically summarize what was learned from these early monitoring efforts because there was little coordination and synthesis across regions. Thus, data were collected for multiple purposes with a wide array of methods and little of the original data are easily accessible. Without the necessary resources, the Water Boards lacked an adequate monitoring framework with consistency in field methods, laboratory and statistical analysis, reporting, and quality assurance. In addition, ambient monitoring in the past was secondary to the regulation and compliance monitoring of wastewater discharges from point sources. While this regulatory approach has resulted in substantial improvements in water quality, the current (and more difficult) challenge is to both control pollution from nonpoint sources and to place compliance monitoring in the broader context of watershed and regional condition. This shift in regulatory focus requires a shift to ambient monitoring.

The recognition of the need for improved ambient water quality monitoring in California prompted the 1999-2000 Budget Act, which required the Water Boards to present a plan for comprehensive surface water monitoring. In November 2000, in response to Assembly Bill (AB) 982, the State Board submitted to the Legislature a plan for the Surface Water Ambient Monitoring Program (SWAMP). The legislature asked that the program address all waterbodies and all beneficial uses, and that all the data collected by the Water Boards be coordinated, of high quality, comparable, and easily accessible to the public. The SWAMP staff delivered a report to the Legislature in 2000 that identified a comprehensive set of monitoring objectives for all key beneficial uses, statewide/regional and site-specific monitoring approaches, and specific indicators appropriate to each beneficial use.

Since the delivery of the report, the Water Boards have been implementing this program to the extent possible. However, the program was never fully funded. The 2000 report estimated the annual cost to implement SWAMP ranged from approximately $59 million to $115 million. These cost estimates included 87 to 132 staff at the Water Boards. Currently, $3.4 million and 17 staff positions have been allocated to SWAMP – approximately 7% of the projected need.

In addition to the original program goals, AB1049 and AB1747 have more recently required all Water Bond grant projects that include an ambient monitoring component to make their data comparable with SWAMP quality control and data formatting standards. The Water Board estimates that 880 grant projects will be funded over a five-year period.

No resources were provided to the SWAMP to assist with developing appropriate training and tools to annually assist the hundreds of grant recipients. This has forced the program to make difficult decisions about how to provide immediate benefit while still making progress toward an overall goal of statewide assessment. Staff ultimately decided to focus monitoring primarily on issues of interest to each Regional Board, while retaining some funds for statewide initiatives such as data management and quality control. As a result, SWAMP efforts throughout the state differ in the extent to which they reflect elements of the original comprehensive plan. Some regions are struggling to implement the rotating watershed approach while others focus primarily on issues specific to their region. Despite this inconsistency in design, the SWAMP has made significant progress on developing the quality assurance and data management programs necessary for statewide accessibility and comparability. The SWAMP recognizes the need to focus and establish program priorities and has already initiated this process.

Recommendations and Supporting Findings

The SPARC identified core strengths of the SWAMP, including:

- Motivated staff and leadership
- Aggressive data management and quality assurance programs
- High level of involvement and entrepreneurship at the regional level
- Growing ability to leverage resources at the regional level
- Recognition of the need for a reliable and diverse suite of indicators.

The SPARC also identified a set of key challenges facing the SWAMP, including:

- California's sheer size and its heterogeneous natural settings
- A complex and diffuse state environmental management structure
- Beneficial use classifications that in some instances are inaccurate or poorly documented, and thus provide a weak basis for assessment
- The absence of a historical monitoring base for all target habitats and beneficial uses
- Difficulty in consistently demonstrating the management utility of the program's information
- Insufficient funding for a comprehensive monitoring and assessment program
- Insufficient institutional support for monitoring coordination and program development.

The following subsections discuss each of the SPARC's recommendations in turn, taking into account the context above. Please note that the recommendations are interdependent and mutually supportive. They are not intended to be considered and/or implemented in isolation from one another.

Recommendation 1: Reevaluate original program goals

Finding and analysis

A comparison of the monitoring plan and reporting requirements in the Report to the Legislature with the SWAMP's current activities shows clearly that the SWAMP is not completely fulfilling the requirements of AB982. Chief among these requirements are the assessment of all major water bodies in the state, providing systematic monitoring data to support the 303(d) listing and delisting process, and implementing statewide a consistent quality control and data management plan. In addition to these original program goals, AB1049 and AB1747 require all Water Bond grant projects that include an ambient monitoring component to make their data comply with SWAMP quality control and data formatting standards. While the SWAMP is addressing some program goals in some regions, it has not evolved into the statewide assessment program originally envisioned.

In the best of circumstances, achieving the SWAMP's original goals would have taken several years of effort, with initial planning and coordination efforts easily requiring a year or more. For example, Region 5 (Central Valley) spent the first year of the program coordinating internally, with other Regional Board programs, and externally with USEPA. In another instance, Region 4 (Los Angeles) spent over a year working closely with a stakeholder group in the San Gabriel River watershed to coordinate SWAMP monitoring with the new watershed monitoring program. While the SWAMP has achieved individual successes such as these, the program's limited funding has restricted their extent as well as staff's ability to expand them beyond their initial scale.

The SWAMP's limited scope has also hampered its ability to consistently achieve the intended level of coordination among State Board and Regional Board water quality monitoring efforts. Success in this regard is uneven across the state. In regions where there is little permit-mandated discharger monitoring (e.g., Region 6 (Lahontan) and Region 3 (Central Coast)) the SWAMP fills a more prominent coordinating role. In other regions, however, the SWAMP is more peripheral and has little if any direct relationship with the existing large NPDES and TMDL monitoring programs. As a result, the SWAMP's role, viewed from a statewide perspective, is a patchwork of different approaches.

This situation, including the SWAMP's peripheral role in many regions, reflects a predictable set of institutional dynamics. The SWAMP effort in each region has a relatively small budget and no broad management mandate to enforce coordination or collaboration with other Regional Board initiatives. Thus, the SWAMP lacks the budget to fully fund its own monitoring and few "chips" to use in negotiating for collaboration with others. For example, the high priority placed on TMDL development and implementation in many regions makes it difficult for a relatively new program like the SWAMP to achieve any substantial influence. What successes have occurred are often due to the creativity and opportunism of regional SWAMP coordinators (e.g., coordination of agricultural waiver and marine discharge monitoring with SWAMP in Region 3 (Central Coast)), the existence of mature regional monitoring programs that provide useful lessons (e.g., the Regional Monitoring Program for Toxic Substances in

San Francisco Bay (Region 2)), or the development of a completely new initiative that is seeking support (e.g., Regional Harbor Monitoring Program in the San Diego Region (Region 9)). While such flexibility and adaptability have served the SWAMP well to date, it does not provide an adequate foundation for achieving the SWAMP's larger goal of providing an integrated combination of statewide and site-specific assessments.

Recommendations

The program goals and monitoring approaches specified in the 2000 Report to the Legislature should be reevaluated in light of current management policy, scientific knowledge, and funding constraints. While the SWAMP Roundtable is undertaking such a reevaluation now, participation should be expanded to include higher-level management within the State Board.

This planning effort should:

- More explicitly define the role(s) of the SWAMP relative to other State and Regional Board programs
- Provide the SWAMP with specific authorities related to monitoring that parallel those it now has related to quality assurance and data management
- Somewhat enhance the overall statewide control of the SWAMP without losing valuable regional flexibility
- Match responsibilities and funding, without losing the entrepreneurial spirit characteristic of the SWAMP.

The SPARC believes that the SWAMP must have a more clearly defined set of working relationships with other State and Regional Board monitoring efforts, and the management support to implement these. Further, it would be of great value for SWAMP to receive a strong mandate from state government that other state agencies and programs should collaborate and contribute to SWAMP monitoring efforts to the maximum extent possible. On the other hand, the SWAMP will ultimately flourish only to the extent that it provides valuable information that supports decision making and that cannot be obtained elsewhere. The remaining findings and recommendations address several specific aspects of this challenge.

Recommendation 2: Identify key target audiences and their needs

Finding and analysis

The Report to the Legislature defined three main goals for the SWAMP: assessing all major water bodies in the state, providing systematic monitoring data to support the 303(d) listing and delisting process, and implementing statewide a consistent quality control and data management plan. Each goal implies its own audience(s), which may be somewhat different at the regional and statewide levels. However, because the SWAMP has evolved with an emphasis on adapting to regional issues, its set of clients is somewhat diverse and differs across regions, sometimes including only the SWAMP itself. For example, SWAMP data in Region 5 (Central Valley) have been used

extensively by the Regional Board's TMDL and Agricultural Waiver programs and have provided useful background information for watershed groups. As another example, about 80 new 303(d) listings in Region 3 (Central Coast) have resulted from SWAMP data.

Despite such individual examples, however, there is no consistent set of clients or audiences for SWAMP products across all regions that can support the program and provide guidance on its future structure and direction. In addition, there are elements of SWAMP monitoring efforts that, because they have no clear link to structured assessment or decision-making processes, have no readily identifiable audience or user. Region by region, SWAMP monitoring efforts address various aspects of the original set of program goals to differing degrees, with an equally diverse set of audiences and clients for the program's information. Conversely, there are obvious candidates as SWAMP clients that have no relationship with the program. This situation results in a lack of focus at the overall program level and the absence of a clearly shared mission across all regions.

The SPARC was aware that the program's relative youth and low level of funding compared to what was originally envisioned are to some extent mitigating factors. However, the SPARC also believes strongly that the SWAMP is not sustainable without stronger and more explicit links, across all regions, with clients and target audiences who actively use SWAMP data in key decision-making processes.

Because of recently enacted requirements in AB049 and AB1747 that grant and water supply projects must comply with SWAMP quality assurance and data management standards, the SWAMP has a large number of new clients for those specific services. It is anticipated that 880 grant projects will need to be made comparable with SWAMP over the next five years. These functions have not been integrated with the SWAMP's core monitoring and assessment functions. The press of processing a large number of project plans and data submissions has prevented the SWAMP from exploring the potential for such integration.

Recommendations

Clients for specific SWAMP services and information products should be identified at both regional and statewide levels and their needs carefully assessed. Clients should include a mix of local and statewide perspectives and be directly related to the revised program goals referred to in Recommendation 1. This effort should build in part on the relationships established by the SWAMP regional coordinators to date but also reflect a more explicit statewide perspective. The SWAMP should also take advantage of the many new relationships it now has with grant and water supply programs. Interactions with these programs about quality assurance and data management plans provide opportunities to learn more about these other programs and build stronger links to the SWAMP.

Recommendation 3: Develop and implement programmatic communication strategy

Finding and analysis

The SWAMP does not consistently provide integrative products, particularly at the statewide level. This issue manifests in three specific ways:

- The absence of comprehensive and consistent statewide information products
- Incompatibility between regional assessments that appear, on the surface, to be based on the same indicators and monitoring approaches
- An emphasis on site-specific, issue-specific assessment and reporting.
- The lack of a consistent, statewide approach to indicator development

The SWAMP has been unable to produce the statewide assessments originally envisioned in the Report to the Legislature, due to its inability to implement the comprehensive statewide monitoring program, its decision to focus available resources largely on issues specific to individual Regional Boards, and the fact that the SWAMP has not yet developed an alternative statewide assessment framework. Even where apparently comparable data are available, differences among Board regions in data analysis and interpretation methods lead to results that cannot readily be combined. For example, the numbers and relative total area of 303(d) listings are markedly higher in Region 1 (North Coast) than in Region 5 (Central Valley). In this case, the disparity reflects the fact that sample data in the North Coast were applied to entire watersheds while in the Central Valley sample data are applied to limited stream reaches. In addition, large areas of some regions have never been sampled, leaving large assessment gaps. Bioassessment tools have not been developed using a consistent approach across the state. These and other similar disparities across regions and data types reflect local decisions that have not been evaluated and reconsidered from the standpoint of an integrated statewide perspective. Finally, virtually all assessments and reports produced to date by the SWAMP focus on site-specific issues within individual Regional Board boundaries.

Individual SWAMP products are well done technical reports. However, there is a lack of products intended for decision makers and/or broader public audiences. This stems, in part, from the issues identified in the previous recommendation, namely that clients and target audiences have not been systematically identified and matched to current program goals. The SWAMP needs focused efforts on data analysis, interpretation and reporting, analogous to focused efforts on data management and QA/AC.

Recommendations

The SWAMP should develop a program-wide communications and education strategy based on program goals and clients' needs. This will involve defining a range of "signature" information products to enhance the value of the program and establish its credibility. These products should range from raw datasets to technical analyses and reports to higher-level syntheses and summaries. The strategy should also include a schedule for the routine production of such products, which may be released on different timeframes, ranging, for example, from yearly for data reports to once every five years

for more comprehensive analyses. Comprehensive analyses should use SWAMP data as well as that available from other sources to assess current conditions, associations between measures, trends over time, and causal mechanisms. The SWAMP should look to other mature programs (e.g., RMP in San Francisco Bay, Chesapeake Bay Program) for examples and should define a consistent set of reporting formats tailored to the purpose and audience for each product.

Recommendation 4: Develop statewide assessment framework

Finding and analysis

The statewide assessment strategy described in the 2000 Report to the Legislature has not been fully implemented and no program-wide strategy has been developed in its stead. As discussed above, the SWAMP made a conscious decision early in its existence to forego implementing the statewide assessment strategy and use its limited funding to address issues specific to each Regional Board. While this was a reasonable decision at the time, the need for statewide assessment remains and the collection of individual SWAMP efforts at the Regional Board level is insufficient to meet this need. The individual regional monitoring designs do not produce data that can be confidently integrated into a statewide picture of conditions and the selection, use, and interpretation of indicators, despite some progress toward improving consistency, remains inconsistent and fragmented (see Recommendation 5). For example, the description of narrative scoring categories for Index of Biotic Integrity (IBI) results differed from region to region. The SPARC believes that the SWAMP will not be sustainable over the long term unless it includes a strategy for developing statewide assessments of key conditions.

The Report to the Legislature described a statewide assessment strategy based on monitoring waterbodies on a five-year rotating schedule and suggested a substantial suite of indicators along with standards and benchmarks for interpreting them. Some Regional Boards are using their SWAMP allocations to begin implementing this strategy, focusing primarily on bioassessment as a common approach. However, the rotating waterbody strategy is not completely suited to all the objectives specified in the Report to the Legislature. It can confound spatial pattern with temporal trends, and monitoring waterbodies once every five years may require an unacceptably long period of time to identify trends for some high-priority issues. Additionally, the SWAMP has not considered the implications of implementing the statewide assessment strategy on a piecemeal basis.

The original statewide assessment strategy clearly cannot be implemented given current funding constraints and newer priorities such as TMDLs. There are also institutional limitations on the SWAMP's ability to independently develop monitoring designs and select indicators. For example, a decision about the use of E. coli as a replacement for the fecal coliform indicator in fresh water is pending at the State Board. Similarly, the State Board is considering a number of other indicators of watershed condition. Thus, while the overall goal of the SWAMP's efforts is to assess the status of beneficial uses within regions, questions about which beneficial uses will be assessed, on what time and space scales, and with what indicators remain unanswered, at least at the statewide scale. In

addition, the relationship between the SWAMP's assessments and other monitoring, assessment, and regulatory efforts are unclear and/or vary from region to region (see Recommendation 5).

Recommendations

The SWAMP should develop a framework for statewide assessment to supplement the efforts currently taking place within regions. This will necessarily involve a budgeting process to determine what proportion of SWAMP funds should be allocated to statewide objectives. The SWAMP's current model for supporting statewide data management and quality assurance efforts could provide a starting point for this exercise. This framework should provide the conceptual structure for the acquisition and use of monitoring information and should include layers of increasing detail, from overall program objectives to definitions of indicators and the methods used to evaluate them on a range of spatial scales.

This assessment strategy should build on an updated set of program goals and should address the needs of key clients and audiences. The framework should include the design of a monitoring network, as well as data mining efforts, that will support both statewide and local/regional objectives and that could be managed at the Regional Board level. The assessment strategy should also provide the ability to prioritize individual issues for further investigation (e.g., specific agricultural chemicals, water withdrawals, endocrine disruptors) and a related approach to indicator tool development. The SPARC has offered to assist in implementing this recommendation by making development of a statewide assessment framework, and accompanying monitoring design(s), one of the subjects of a future technical review.

It is important that the effort to implement this recommendation incorporate lessons learned in other similar efforts both within the state and elsewhere (see Recommendation 5). The resulting strategy should define, at least at a high-level, the conceptual linkages among program goals, user needs, monitoring objectives, study design(s), and data analysis and interpretation.

Recommendation 5: Take more advantage of available resources

Finding and analysis

The SWAMP does not take advantage of available resources and existing programs to the extent that it should at both the regional and statewide levels. This finding appears to be contradicted by the clear evidence of collaboration and coordination with other programs at the Regional Board level. For example, the SWAMP has been collaborating with Department of Fish and Game and others on developing a number of IBIs (Index of Biotic Integrity) for interpreting bioassessment data across the state. Region 9 (San Diego) collaborated with a number of stormwater permittees on the development of a regional harbor monitoring program, while Region 3 (Central Coast) has coordinated SWAMP monitoring efforts with the Monterey Bay marine discharger program and the Salinas stormwater permit. These efforts, and others like them in other regions, are clearly valuable and help to leverage the limited amount of SWAMP funding.

However, the SPARC also found that the SWAMP had no systematic strategy, at the program level, for coordinating with other large monitoring efforts, particularly those driven by permits. Thus, there is no readily identifiable SWAMP infrastructure for coordination, collaboration, and integration with other monitoring. In some instances, major permittees had only become aware of SWAMP through the very recent requirement that their Propositions 13, 40, and 50 grants comply with SWAMP quality assurance requirements. The absence of such a programmatic infrastructure has resulted in a situation where one of the SWAMP's key strengths to date, namely the creativity and initiative of the regional coordinators, has led to a very diverse and fragmented set of approaches and relationships across the state.

The SWAMP Roundtable members argue, with some validity, that this diversity is a necessary reflection of the varied issues, interest groups, and programs from region to region. However, it also reflects the fact that the SWAMP, with regard to the large NPDES and TMDL monitoring efforts, is essentially operating at the margins of the system. As discussed in Recommendation 1, this is a natural result of the SWAMP's relative lack of institutional "chips" (i.e., funding, higher-level management support) to play in the regulatory and management infrastructure.

The SPARC also observed an uneven awareness of other monitoring and science programs, both within and outside the state. For example, the SWAMP QA program is modeled after the successful program in Texas, but the SWAMP has not considered the way many states have successfully designed monitoring programs that address both state and local issues. Similarly, extensive regional monitoring efforts in other states are potentially valuable, but underutilized, sources of ideas and insights. To its credit, the SPARC review represents an assertive effort to obtain such external input, and SWAMP Roundtable members noted that travel restrictions have prevented them from attending conferences and other networking activities.

Recommendations

The SWAMP must develop more consistent, stronger, and broader connections with major monitoring efforts at the local, regional, and statewide levels. This will require not only a systematic strategy with clear goals but also support from higher levels of the State Board management infrastructure (see Recommendation 1). Such support will be needed to break through the marginalization the program now suffers from. However, the development of effective relationships with other monitoring programs will depend on the SWAMP being able to articulate a clear mission and set of program goals.

The SWAMP should also develop working relationships with similar programs in other states and at the federal level. These other programs should be mined for data, approaches, insights, and advice. Such informal sources of input should be combined with periodic formal reviews that can act as mechanisms for exposing the SWAMP to fresh ideas and constructive criticism.

Recommendation 6: Realign decision making with new program goals

This finding addresses question #8 in the list of questions for the review committee (see Appendix 2). This question was the only one dealt with directly.

Finding and analysis

The SWAMP's decision-making and prioritization processes are inadequate for the challenges facing the program. This finding is not intended to disparage or undermine the ways in which the SWAMP's decision making to date has been flexible, adaptive, and effective. The SWAMP Roundtable's collaborative and consensus-based decision process is admirable and has obviously contributed to the program's ability to achieve some notable successes despite the drastic reduction in its intended budget and scope.

The SWAMP's decision making has focused on dividing its budget between statewide responsibilities such as program management, data management, and quality assurance and the Regional Boards, with individual Boards given a large amount of autonomy to pursue their own priorities. This autonomy has been important to the individual boards and should be preserved to the greatest extent possible. As one SWAMP coordinator noted, "The SWAMP allocation is the only funding I have to do discretionary monitoring." However, the program lacks a more formal infrastructure and processes to develop statewide strategy and align the regions toward common program goals.

The SWAMP has finessed a tension between statewide and regional interests since its inception, largely through a collaborative decision process and by foregoing the more ambitious statewide assessment goals in the Report to the Legislature. This tactic proved successful in establishing some support within the Regional Boards and in identifying achievable, smaller-scale projects. It also resulted, however, in sometimes substantial differences among individual Regional Boards in decision-making and prioritization processes. It also left the SWAMP with a less than adequate ability to establish centralized policies and define overall program direction when its consensus-based decision-making process breaks down.

The SWAMP has explicitly allocated a portion of its funds to pilot projects and to methods development that the Roundtable believes may ultimately benefit the entire state. Notable examples include the development of bioassessment methods and a study of conditions in harbors in southern California. In some cases, the Regional Boards have agreed to reduce their budget allocations to fund these broader projects. In addition, there are instances in which efforts undertaken by individual Regional Boards may eventually have statewide applicability. For example, Region 6's (Lahontan) MTBE monitoring in Lake Tahoe served as a template for Region 1's (North Coast) monitoring effort. Similarly, Region 3 (Central Coast) has investigated bioaccumulation of pollutants in sand crabs and the Department of Fish and Game's Oil Spill Prevention and Response (OSPR) program is investigating this method's potential as an indicator of oil contamination.

Examples such as these reflect the SWAMP's creativity, its healthy opportunism, and the regional coordinators' ability to work independently. These are valuable traits that should

be protected. However, they are not adequate, alone, for a program that desires to have a more substantive impact, at both the statewide and regional/local levels. The SWAMP lacks a systematic decision process, in the context of a statewide assessment strategy, for deciding which methods development and pilot projects are of statewide import, and for deciding which regions are the best places to initiate them. The SWAMP also lacks a formal review process for assessing whether such projects are on track to achieving their goals. Pilot projects do not always make best use of available knowledge and experience elsewhere, and relationships with outside scientists are too often based on local working relationships. As one example, the SWAMP's efforts to develop a statewide assessment strategy appear to be completely independent of other similar efforts in nearby western states.

Recommendations

The SPARC believes that the SWAMP's current management has demonstrated strong leadership and clearly has the skills and the support within the program to lead it forward as it addresses these recommendations.

The SWAMP should evaluate its current management structure and decision making and align it more closely with its revised program goals, its role with respect to other regulatory and monitoring efforts, and its statewide assessment strategy. Any revisions to present decision-making processes should balance the benefits of collaborative decision making among the Roundtable members with some mechanism for moving forward in the absence of consensus. This may involve giving the program manager more authority.

More specifically, the SWAMP should develop procedures to address the deficiencies highlighted in the previous section with respect to identification, prioritization, and review of pilot projects. In addition, the program would benefit from a clearing house to facilitate information sharing among the regions.

APPENDIX A: Biographies of SPARC Members

Mr. Rich Batiuk is the Associate Director for Science at the U.S. Environmental Protection Agency's Chesapeake Bay Program Office located in Annapolis, Maryland. He is responsible for providing state-of-the-science environmental monitoring, multi-media modeling, distributed data/information management, and technical data analysis, synthesis and interpretation support to the Chesapeake Bay Program partners. In his 20 years with the Chesapeake Bay Program, he has led the integration of science into multi-partner decision making, recently culminating in the 6-state watershed adoption of new Chesapeake Bay water quality standards and establishment of new, far reaching nutrient and sediment reduction goals and loading caps. Mr. Batiuk received his M.S. in Environmental Toxicology from American University in Washington D.C. in 1985.

Dr. Brock Bernstein is an independent consultant as well as the President of the National Fisheries Conservation Center. He specializes in designing and evaluating environmental monitoring programs, structuring management and research initiatives, and developing policy. He is a former member of the National Research Council's Marine Board, where he helped to identify national priorities for research, management, and technology development. He has served on several National Research Council Committees, including ones to develop database management and data integration strategies for international global change research (NRC Report: Finding the Forest in the Trees - The Challenge of Combining Diverse Environmental Data), to assess marine monitoring practices (NRC report: Managing Troubled Waters) and improving mechanisms for coastal governance on a national scale (NRC Report: Striking a Balance). Dr. Bernstein received his Ph.D. in Biological Oceanography from Scripps Institution of Oceanography in 1977.

Dr. Charles Hawkins is Director of the Western Center for Monitoring and Assessment of Freshwater Ecosystems at Utah State University. His research focuses on facilitating the development and implementation of scientifically sound methods for monitoring and assessing the condition of aquatic resources in the western United States. He is a Member of the EPA Science Advisory Board's Ecological Processes and Effects Committee and is also on their Subcommittee on Biological Criteria. He has published more than 50 research articles and formerly served as an Associate Editor for the Journal of the North American Benthological Society. He has also served as Chair of the Aquatic Ecology Section of the Ecological Society of America. He received his PhD from Oregon State University in 1982.

Dr. Fred Holland is Director of the Hollings Marine Laboratory, which is a National Oceanic and Atmospheric Administration research facility located in Charleston, SC and is one of three NOAA Centers of Excellence for Oceans and Human Health Research. Prior to joining NOAA in 2001, Dr. Holland was Director of the Marine Resources Research Institute for the South Carolina Department of Natural Resources. He has nearly 200 publications and was a co-author of Managing Troubled Waters, the National Academy of Sciences seminal report on aquatic monitoring. Dr. Holland received his

Ph.D. in Biology from the University of South Carolina in 1974. He is presently an Adjunct Professor in the Marine Biology Program of the College of Charleston, Marine Science Program at the University of South Carolina and the Marine Biomedical and Environmental Sciences Department at the Medical University of South Carolina.

Mr. Paul Kazyak is the Ecological Assessment Program Chief for the Maryland Department of Natural Resources, where he oversees the Maryland Biological Stream Survey and its volunteer component, Maryland Stream Waders. He has served on a number of panels and boards, including the Steering Committee for the Maryland Water Monitoring Council, the Mid-Atlantic Highlands Stream Ecology Workgroup, Anne Arundel and Howard County stream monitoring design, EPA's National Lakes Survey, EPA's Goals and Indicators Project, and EPA's Wadable Streams Assessment. Paul has authored more than 75 publications related to aquatic ecosystems. He received his Master's Degree in Environmental Biology from the State University of New York's College of Environmental Science & Forestry in 1988 and has been teaching graduate-level freshwater ecology courses at Johns Hopkins University since 1994.

Mr. John Maxted has recently returned from New Zealand after 6.5 years overseas to take up a lead scientist position at the South Florida Water Management District (SFWMD); effective December 19, 2005. In New Zealand, Mr. Maxted was Senior Freshwater Ecologist for the Auckland Regional Council in New Zealand where he designed, implemented, and managed ecological monitoring programs for streams, lakes, and wetlands. Prior to moving to New Zealand in 1999, Mr. Maxted was Senior Scientist for the Delaware Department of Natural Resources and Environmental Control, where he was responsible for implementing EMAP and other ecoregion applications to the assessment of freshwater and estuarine systems for Section 305(b), 303(d), and TMDL reporting. Mr. Maxted received his M.S. from the University of Michigan in 1976.

Dr. Robert Ward is Director of the Colorado Water Resources Research Institute at Colorado State University, where his principal research areas are in water quality management and monitoring. His research interests include: (1) establishing design criteria for water quality information systems; (2) design of water quality monitoring systems; (3) water quality hydrology; (4) appropriate wastewater treatment technology design and management; (5) data utilization in water quality management; and (6) relating water quality criteria and standards to water quality monitoring practices. He is a member of the National Water Quality Monitoring Council and is Chair of the Water Section for the National Association of State Universities and Land Grant Colleges. He has published two books and over one hundred scientific articles about water quality. Dr. Ward received his Ph.D. from North Carolina State University in 1970.

Dr. Stephen Weisberg is Executive Director of the Southern California Coastal Water Research Project (SCCWRP) where he specializes in the design and implementation of environmental monitoring programs. He serves on numerous federal advisory committees, including the Ocean Research and Resources Advisory Panel, the National Science and Technology Council Joint Subcommittee on Ocean Science and Technology, the US Global Ocean Observing System Steering Committee, the EPA Board of Scientific Counselors Water Quality Committee and the Alliance for Coastal Technology

Stakeholders Council. He also serves on numerous state/regional advisory committees, including those for the Southern California Wetlands Recovery Program, the University of Southern California Sea Grant Program, the Center for Integrated Coastal Observation, Research and Education, and the State of California's Clean Beach Task Force. Dr. Weisberg received his undergraduate degree from the University of Michigan and his Ph.D. from the University of Delaware.

APPENDIX B: Initial Questions Posed to the SPARC

Scientific Planning And Review Committee (SPARC)
October 5-7, 2005

Questions for the Review Committee

1. Are the program goals clearly stated?
    a. Is it clear which subset of goals will be addressed with available funding?

2. Is the design of the program suitable for achieving the stated objectives? Are the goals, assessment questions, indicators and monitoring objectives integrated in a logical way? Do they lead to effective monitoring designs?
    a. At the Statewide level?
    b. At the Regional level?

3. Are the field/laboratory methods, and associated quality assurance procedures, appropriate to meet the program goals?

4. Are the data management and data distribution approaches effective?

5. Are the data being analyzed and interpreted correctly?

6. Is information from the program being adequately communicated and used to support management decisions or change management priorities/directions?

7. Has the program effectively leveraged its resources through coordination with other programs?

8. Is the State best served by its current management structure for SWAMP, which is distributed among the Regional Water Boards? Or, should it consider other options such as the NAWQA model, a more centralized structure, or some hybrid model?

DRAFT

The Surface Water Ambient Monitoring Program Communications and Outreach Strategy 2006

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Revised: February 10, 2006

SWAMP
Surface Water
Ambient Monitoring
Program

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1.0 PREFACE

The State Water Resources Control Board and the Water Boards introduced the Surface Water Ambient Monitoring Program (SWAMP) in 2001 to meet the Clean Water Act requirements and provide comprehensive information on the status of beneficial uses of California's surface waters. The program was designed to stretch beyond federal requirements and coordinate a statewide framework of methods and strategies to improve the monitoring, assessment, and reporting of California's water quality. The SWAMP recognized the need to obtain outside assessment of the program and in 2005 formed the SWAMP Scientific Planning and Review Committee. This committee held a workshop in 2005 and developed a report with recommendations for program improvements. Two recommendations from the report were that the SWAMP should identify target markets for its products and that it should develop a programmatic communications strategy. The following SWAMP communications and outreach strategy is in response to these recommendations.

2.0 EXECUTIVE SUMMARY

This document is a communications and outreach strategy developed by the Surface Water Ambient Monitoring Program (SWAMP). It is intended to be used as a management tool for effective program planning. It will provide focus for product design, communication management, identification of target markets, and the most effective use of resources. The strategy integrates outreach and communications systems with program goals to ensure that data produced by the SWAMP will be used in environmental decision-making processes.

3.0 COMMUNICATIONS AND OUTREACH OBJECTIVES

- Develop useful and consistent products targeted to defined clients
- Target clients understand the program's goals and components
- Target clients endorse and support the program
- Create and maintain a signature look that is recognized by target clients
- The SWAMP staff and round table participants are able to communicate the program's key messages in a comprehensive, consistent manner
- The SWAMP information and products are accessible and available in a timely manner

4.0 CURRENT SITUATION

4.1 Major Communications and Outreach Concerns:

- The SWAMP is not widely recognized as necessary and beneficial.
- There is no systematic integration of the SWAMP goals, target clients, products, and communication.
- The SWAMP has not developed measurement tools for the assessment of its products and communication.

4.2 Target Clients:
Prior to the SPARC recommendations, target clients and their product needs were not assessed or developed in a programmatic setting. Each project within the SWAMP has a unique client base yet the program as a whole does not systematically integrate its client base and the intended use of its data. The result is fragmented recognition and varying endorsement of the SWAMP by its potential client base.

4.3 Products:
The SWAMP has a variety of products for both participants within the program and those outside the program. Product examples include detailed data reports, training courses, a data management system, a web page and tools, scientific publications, and a quality assurance management system.

The SWAMP has put significant resources into developing products related to its infrastructure such as the database and the quality assurance program. These products have been developed without a Communications and Outreach strategy. Prioritization has mainly been directed by a reactive approach to immediate needs rather than a systematically developed plan that embraces the needs of SWAMP's target clients.

The SWAMP's data reports and assessments are varied in their usefulness for environmental decision-making. There is no programmatic process for reporting data or assessing the success of data reports. Further, there is no programmatic synthesis of data to communicate environmental conditions state-wide.

Informal interviews with target clients point to varied levels of satisfaction with the SWAMP's products. This variation is also found at the individual product level (i.e., some clients are satisfied, and others are not, with the same product). The overall satisfaction level of clients is not consistent with the program's goals.

The result from the current approach to product design, development and implementation is a scattering of products which may or may not have grounding in programmatic goals and usefulness.

Table 1 shows performance measures for the SWAMP's current products. This table will be completed in the final Communications and Outreach strategy.

4.3.1 Table 1 Performance of Current SWAMP Products

Product		Desired Outcome	Annual Cost	Meets Client Needs (Y/N)	Meets (M) or Conflicts (C) w/SWAMP Goals
Reports	305b Reports				
	Comprehensive Monitoring and Assessment Strategies Report				
	Reports for Environmental Community (List of Reports available upon request)				
	QAPP Reports				
Training	QA Course	A basic understanding of SWAMP QA requirements			
	SWAMP Field Methods Course				
	CA Aquatic Bioassessment Workshops				
	Bioassessment data analysis				
	Survey Monitoring (Probabilistic)				
	MLML Database Training	A basic understanding of how to use the MLML database			
	Monitoring Design Course	A basic understanding of monitoring design.			
Databases	Data Summaries				
	Monitoring Data Retrieval	Ability to access and query the database as needed			
	SWAMP 303d data	Access to data to support 303d reporting			
	MLML database, support, and input formats				
Web pages	SWRCB SWAMP				
	SWAMP RWQCB Reports				
	RWQCB Links				
	Comparability Guidance				
	QMP Guidance Manual				

4.4 Communication

The SWAMP does not have a communication management plan. It does have a web page and a recently designed logo. The program has recognized its need for a communication plan and will develop a plan within the context of its communications and outreach strategy. The program has enlisted the help of graphic design and public relations firms.

5.0 OPPORTUNITIES

5.1 Target Clients

This section provides preliminary information on the SWAMP's target clients, how they are matched to the program's goals and what current SWAMP products are developed for each group.

The SWAMP round table has identified six target client groups.

- U.S. Environmental Protection Agency (US EPA)
- State Water Resources Control Board and staff (SWRCB)
- Regional Water Quality Control Boards and staff (RWQCB)
- Regulated Community
- Environmental Community
- Grant Recipients

Other client groups that are not defined as target are:

- State Legislature
- General Public

5.1.1 Table 2 Target Client Groups and Requirements

Target Client Groups	Client Requirement
US EPA	Provide complete comprehensive monitoring in accordance with Clean Water Act and other environmental requirements.
SWRCB and staff	Establish a statewide framework to assess water status that provides scientifically defensible and comparable data to be used for TMDL program, 303d listing and citizen monitoring.
RWQCB and staff	Coordinate monitoring efforts and collaboration with other programs to provide scientifically defensible and comparable data. Act as a resource for training, access to data, interpretation of data and quality assurance.
Regulated Community	Provide scientifically defensible data of known and documented quality provided in an efficient and cost effective manner. Provide leadership, solutions, and education.
Environmental Community	Provide communication of water status and educational materials to support efforts to promote protection and restoration of the quality of California's aquatic ecosystem.
Grant Recipients	Act as a resource for training, access to data, interpretation of data and quality assurance.
State Legislature	Provide data gathering and interpretation and expert consultation regarding the status of state water bodies to support informed fiscal and environmental decisions
General Public	Communication of water status & educational materials

5.1.3 Table 4 Target Client and Current SWAMP Products

Target Client	Training	Web Page	MLML Database	Reports
USEPA				• 305b Reports (Biennial) • Comprehensive Monitoring and Assessment Strategies Report (Oct. 2005) • See the three reports generated for the USEPA through CMAP, listed below
SWRCB (Craig Wilson) (Water Quality Assessment Unit/303d Listing & Delisting)			• Data summaries • Getting monitoring data • SWAMP data used for 303d listing at last cycle (2004)	
RWQCBS	• QA Course • SWAMP Field Methods Course • California Aquatic Bioassessment Workshops (given by Calif .DFG) • Bioassessment data analysis • Survey (probabilistic) monitoring (given by USEPA) Individual database training by MLML DMT.	• The SWRCB's SWAMP web page with its information. • The SWAMP webpage posts RWQCB reports • The SWAMP webpage provides links to the RWQCB web site	• MLML Database • MLML database support • MLML Data input formats	• Comprehensive Monitoring and Assessment Strategies Report (Oct. 2005) • Template and checklist for preparing QAPP Reports.
Regulated Community	• Monitoring Design Course • QA Course • SWAMP Field Modules Course	• Comparability Info for QA and MLML Database (on MLML web page) • QMP Guidance Manual (on SWRCB web page)	• MLML Database • Database input formats • Database Development and Training (Proposal) for Sac./SJV Irr. Dist. Watershed coalitions	• Template and checklist for preparing QAPP Reports.

CONTINUED 5.1.3 Table 4

Target Client	Training	Web Page	MLML Database	Reports
Environmental Community	• California Aquatic Bioassessment Workshops (by Calif .DFG)			• Data from the Citizen's Monitoring Program. • See the reports listed below.
Grant Recipients	• Monitoring Design Course • QA Course • SWAMP Field Modules Course • California Aquatic Bioassessment Workshops (by Calif .DFG)	• Comparability Info for QA and MLML Database (on MLML web page) • QMP Guidance Manual (on SWAMP web page)	• Database input formats	• Template and checklist for preparing QAPP Reports.

Reports Received By the Environmental Community:

- Chemical Concentrations in Fish Tissues from Selected Reservoirs and Coastal Areas (Reg. 2)
- Monitoring of Coastal Contaminants Using Sand Crabs (Reg. 3)
- Water Quality in the Calleguas Creek and Santa Clara River Watersheds – Under the SWAMP Program, FY 2000-2001 (Reg. 4)
- Water Quality in the Santa Monica Bay Watershed - Under the SWAMP Program, FY 2001-2002 (Reg. 4)
- Pit River Water Quality Study 2001-2002. Final Report, 2004 (Reg. 5)
- Feather River Coordinated Resource Management Watershed Monitoring Program, Oct. 2000 – Dec. 2003. Final Report, 2004 (Reg. 5)
- Macroinvertebrate Assemblages in Agriculture and Effluent-Dominated Waterways of the Lower Sacramento River Watershed, 2004 (Reg. 5)
- Monitoring of Sediment-Bound Contaminants in the Lower Sacramento River Watershed. July 2004 (Reg. 5)
- A Quantitative Framework for Reference Site Selection: Case Study from the Sierra Nevada Foothills Ecoregion. Dec. 2002 (Reg. 5)
- Performance of Different Bioassessment Methods from California-Side by Side Comparisons of Field, Laboratory and Analysis Procedures for Streams of the Eastern Sierra Nevada. 2004 (Reg. 6)
- Use of Diatoms and Soft Algae as Indicators of Environmental Determinants in the Lahontan Basin, USA. 2003. (Reg. 6)
- Investigation of Near Shore Turbidity at Lake Tahoe. 2002. (Reg. 6)

Reports Received by the USEPA (generated through CMAP):

- Draft Technical Report #1: Condition Assessment of Coastal Streams In Southern and Central California. July 2004. (SWRCB)
- Probabilistic Assessment of the Biotic Condition of Perennial Streams and Rivers in California. August 2005. (SWRCB)
- Development of a Benthic Index of Biotic Integrity (B-IBI) for Wadeable Streams in Northern Coastal California and its Application to Regional 305(b) Assessment. (SWRCB)

5.1.4 Table 5 SWAMP Strategy Goals matched to Target Clients

Strategy	
Goals • Develop SWAMP monitoring strategy for developing and implementing an integrated comprehensive statewide monitoring program in 10 years.	**Target Client** • RWQCB • SWRCB • US EPA • State Legislature
• Implement SWAMP monitoring strategy.	• RWQCB • SWRCB • US EPA • State Legislature
• Promote coordination of monitoring activities and comparability of data.	• RWQCB • SWRCB • US EPA • RWQCB Staff • Regulated Community • Environmental Community
Monitoring Objectives	
Goals • Define statewide monitoring objectives.	**Target Client** • RWQCB • SWRCB • US EPA • Regulated Community • Environmental Community
• Define regional monitoring objectives.	• RWQCB • SWRCB • US EPA
• Develop consensus on shared objectives.	• RWQCB • SWRCB • US EPA
Monitoring Design	
Goals • Refine management questions for assessing core beneficial uses for all waterbody types.	**Target Client** • RWQCB • SWRCB • US EPA
• Inventory management questions of existing programs and monitoring entities.	• RWQCB • SWRCB

CONTINUED 5.1.4 Table 5

Monitoring Design CONTINUED	
• Develop strategy to answer assessment questions for each waterbody type.	• RWQCB • SWRCB • US EPA • Environmental Community
• Design cost-effective monitoring program.	• RWQCB • SWRCB • US EPA • State Legislature • Regulated Community
• Develop and implement a suite of predictive tools to maximize our ability to effectively manage water quality.	• RWQCB • SWRCB • US EPA
Indicators	
Goals • Define core indicators for statewide monitoring and assessment for each designated use and for overall watershed health.	**Target Client** • RWQCB • SWRCB • US EPA • Environmental Community
• Recommend set of core and supplemental indicators for use at local watershed scale.	• RWQCB • SWRCB • US EPA • Environmental Community
• Develop indices for assessment of biological communities for different waterbody types.	• RWQCB • SWRCB • US EPA • Environmental Community
• Develop a set of locally appropriate indices of biological integrity (IBI) for wadeable streams.	• RWQCB • SWRCB • US EPA • Environmental Community
Quality Assurance	
Goals • Implement Quality Assurance Team to provide technical oversight and direction to SWAMP QA activities.	**Target Client** • RWQCB • SWRCB • US EPA • RWQCB Staff • Regulated Community • Grant Recipients

CONTINUED 5.1.4 Table 5

Quality Assurance CONTINUED	
• Develop and document SWAMP Data Quality Objectives (DQOs) for each of the core indicators.	• RWQCB • SWRCB • US EPA • RWQCB Staff • Regulated Community • Grant Recipients
• Evaluate the existing QA/QC program, including the new methods and program changes, against SWAMP DQOs.	• RWQCB • SWRCB • US EPA
• Implement QA activities to produce data of high consistency/comparability among projects of different scales.	• RWQCB • SWRCB • US EPA • RWQCB Staff • Regulated Community • Grant Recipients
• Implement QC procedures to produce defensible, credible data that meets SWAMP QMP/QAPrp.	• RWQCB • SWRCB • US EPA • RWQCB Staff • Regulated Community • Grant Recipients
• Integrate SWAMP QA/QC procedures in other State Water Board Programs.	• RWQCB • SWRCB • US EPA • RWQCB Staff
Data Management	
Goals • SWAMP ambient monitoring data will be stored and checked for comparability in the SWAMP database.	**Target Client** • RWQCB • SWRCB • US EPA • RWQCB Staff • Regulated Community
• Provide training and tools to facilitate the use of SWAMP data and information by The State Water Board (intra-agency) and non-State Water Board (inter-agency) programs.	• RWQCB • SWRCB • RWQCB Staff • Regulated Community • Grant Recipients
• Integrate SWAMP data with information collected by the California Water Boards (intra-agency) and non-State Water Board (inter-agency) programs.	• RWQCB • SWRCB • US EPA

CONTINUED 5.1.4 Table 5

Data Analysis and Assessment	
Goals	**Target Client**
• Develop a method for assessing standards attainment for listing purposes (303(d)).	• RWQCB • SWRCB • US EPA • RWQCB Staff • Regulated Community
• Develop guidance to assist in 303(d) and 305(b) assessments, consistent with the 303(d) listing policy.	• RWQCB • SWRCB • US EPA • RWQCB Staff • Regulated Community
Reporting	
Goals	**Target Client**
• Produce timely and complete water quality reports and lists as required by the Clean Water Act and consistent with current USEPA guidance.	• RWQCB • SWRCB • US EPA • RWQCB Staff • SWAMP Legislature
• Report to the public on water quality, taking into account the needs of interested audiences. Use various formats and media such as brochures, fact sheets, report cards, oral presentation, and the internet.	• RWQCB • SWRCB • US EPA • RWQCB Staff • SWAMP Legislature • Regulated Community • Environmental Community • General Public
• Produce technical reports and peer-review journal articles resulting from monitoring program activities.	• SWRCB • US EPA • Environmental Community
Programmatic Evaluation	
Goals	**Target Client**
• Ensure that the program is being implemented as designed.	• RWQCB • SWRCB • US EPA • Legislature

CONTINUED 5.1.4 Table 5

Programmatic Evaluation CONTINUED	
• Ensure that the SWAMP program is meeting the needs of other Board programs (for example, the TMDL or NPS programs).	• RWQCB • SWRCB • US EPA • SWAMP Legislature
• Ensure that the program is technically sound.	• RWQCB • SWRCB • US EPA
General Support and Infrastructure Planning	
Goals • Integrate SWAMP QA/QC procedures in other State Water Board Programs.	**Target Client** • RWQCB • SWRCB • US EPA • SWAMP Legislature • Environmental Community
• Provide ongoing program coordination, administration and oversight.	• RWQCB • SWRCB • US EPA • RWQCB Staff • SWAMP Legislature • Regulated Community • Environmental Community • Grant Recipients
• Update the SWAMP needs assessment.	• RWQCB • SWRCB • US EPA

5.2 COMMUNICATIONS AND OUTREACH COMMITTEE

The communications and outreach strategy will be developed and implemented by a two to five member SWAMP communications and outreach committee. The communications and outreach committee will have a brief charter that describes member responsibility and the committee's purpose. It is anticipated that the committee will meet weekly during the first three months and semi-monthly thereafter.

In the final communications and outreach strategy, this section will briefly describe the communications and outreach committee and reference its charter. The charter will be attached as an appendix.

Example Elements of the Communications and Outreach Committee Charter:

- 2-5 members including the SWAMP Coordinator

- Committee oversees the communication of the SWAMP program. It is responsible for creating uniformity in documents, reports, publications, web postings, and training tools associated with the program and to formally review all documents prior to being released.
- Creates and maintains a communications and outreach implementation schedule.
- Create a uniform (signature) look for all documents, all documents released to the public and for training purposes shall be reviewed by the communications and outreach committee.
- The communication committee shall present at all round tables meetings.
  i) Update any new communications and outreach needs/wants for users.
  ii) Discuss any wanted changes to communications and outreach management throughout the SWAMP.
- Committee is responsible for ensuring the communications and outreach plan (including products) is assessed annually.
- Committee is responsible for meeting communications and outreach objectives and implementation schedule.

5.3 KEY MESSAGES

It is necessary to develop a set of key messages that are prioritized by relationship to the SWAMP goals and target client groups. The key messages are then incorporated into different communications and outreach tactics as appropriate for the product audience. Key messages and the program's ability to convey them are evaluated on a number of levels during product performance assessments.

For example: A key message might be that the SWAMP provides guidelines for data comparability from sample collection through data reporting. The program would then ask:

Which target clients are matched to this message?
Which SWAMP goals are matched to this message?
Which tactic(s) is this message incorporated into (e.g., training courses)?
Is the message effectively communicated via the tactic?
Are the target clients receiving the message? Can they articulate it back to us?
Is the message receiving adequate priority?

5.3.1 Table 6 Key Message/Client/SWAMP Goal/Tactic

Key Message	Priority	Target Client Group	SWAMP Goal	Tactic(s)
Provides Guidelines		Regulated Community Grant Recipients RWQCB and staff	Promote coordination of monitoring activities and comparability of data.	Training Web Page Newsletter

5.3.2 Historical SWAMP Messages

Water quality monitoring is an essential tool for measuring water status, maintaining water quality, identifying trends, developing and assessing solutions, and providing data for regulatory decisions.

SWAMP provides a framework for statewide monitoring and provides scientifically defensible and comparable data through the use of application-appropriate methods. SWAMP provides universal procedures for sample collection, analysis, reporting, verification, validation, and data management.

The SWAMP program encourages collaboration with other agencies in order to leverage available monitoring funding in a cost-effective manner.

5.3.2.1 Table 7 Target Client Group matched with Historical Message

Target Client Group	Historical Message
U.S. Environmental Protection Agency (US EPA)	Data Resource • Coordinate, gather, and interpret data • Consistent communication • Supportive technology • QA • Training • Establish bounds and focus Framework • Standards • Time saving • Eliminates duplication of efforts • Coordinates • Centralized infrastructure Role Model
State Water Resources Control Board (SWRCB)	Data Resource • Coordinate, gather, and interpret data • Consistent communication • Supportive technology • QA • Training • Establish bounds and focus Framework • Standards • Time saving • Eliminates duplication of efforts • Coordinates • Centralized infrastructure Role Model
Regional Water Quality Control Boards (RWQCB)	Data Resource • Coordinate, gather, and interpret data • Consistent communication • Supportive technology • QA • Training • Establish bounds and focus Framework • Standards • Time saving • Eliminates duplication of efforts • Coordinates

	• Centralized infrastructure Role Model

CONTINUED 5.3.2.1 Table 7

Target Client Group	Historical Message
RWQCB Staff	Data Resource • Coordinate, gather, and interpret data • Consistent communication • Supportive technology • QA • Training • Establish bounds and focus Framework • Standards • Time saving • Eliminates duplication of efforts • Coordinates • Centralized infrastructure Role Model
Regulated Community	Observer • Objective, trustworthy, accurate, and fair Messenger • Diplomatic, collaborative, objective, expert, unbiased Data Resource • Establishes bounds and focus • Balanced perspective Training • Monitoring
Environmental Community	Objective Watch Dog • Trustworthy, accurate, and fair Messenger • Balanced perspective • Report card
Grant Recipients	Data Resource • Coordinate, gather, and interpret data • Consistent Communication • Supportive Technology • QA • Training • Establish bounds and focus Framework • Standards • Time Saving • Eliminates Duplication of Efforts • Coordinates • Centralized infrastructure Role Model

CONTINUED 5.3.2.1 Table 7

Target Client Group	Historical Message
State Legislature	Guardian • Scientifically Defensible • Scientifically Grounded • Guard Water Quality • Forecaster Fiscal Watch Dog • Alarm system • Forecaster • Knowledge base Data Resource • Coordinate • Gather and Interpret • Consistent Communication • Supportive technology • QA Educator • Scientific experts • Develop technical standards • Consistent communication
General Public	Guardian • Scientifically Defensible • Scientifically Grounded • Guard Water Quality • Forecaster Fiscal Watch Dog • Alarm system • Forecaster • Knowledge base Data Resource • Coordinate • Gather and Interpret • Consistent Communication • Supportive technology • QA Educator • Scientific experts • Develop technical standards • Consistent communication

6.0 PRODUCTS AND TACTICS

6.1 Communications Management

Management of the SWAMP communications is necessary to ensure a signature look and that key messages are consistent and matched to the SWAMP goals. The communications and outreach committee will draft and implement a communication plan as part of the

communications and outreach strategy. The committee will enlist the help of the graphic design and public relations firms. The communication plan will detail how SWAMP products are promoted with specifications regarding the use of language, fonts, graphics, and formatting. The communication plan does not define products, but rather how the products are presented and promoted. Templates for items such as power point presentations, press releases, and technical reports will be products of the communication management plan. All communication on SWAMP will be reviewed by the communications and outreach committee prior to public release.

In the final communications and outreach strategy, this section will include a finalized communications plan with example templates.

6.2 Newsletter

An electronic newsletter that is presented in a printer-friendly format will be issued at regular intervals. The graphic design and public relations firms are working with the communications and outreach committee to create a copy draft by Feb. 8, 2006. It is anticipated that the first newsletter will be launched the first week of April.

The final communications and outreach strategy will outline not only the design, content, and scheduling of newsletters, but also how the newsletters will be promoted and assessed.

Example Ideas for Newsletter:

- Newsletter will be produced quarterly (possibly monthly depending on content)
- The format will be an electronic newsletter that is printable
- The title and date of the newsletter should be included at the top of the first page
- There should be a side bar on the first page that highlights what is included in the particular issue.
- A calendar of upcoming meetings and events should be included
- Must be clearly tied to key messages, target clients, and SWAMP goals
- 3-4 pictures related to articles could be incorporated; graphs may also be needed depending on the article.
- The articles will profile regional success stories, region-specific utilization of SWAMP, profile new and innovative research, interviews with public officials or legislators, etc.
- There should be a regular section (possibly a sidebar) that includes updates on items such as the database
- There should be a regular section (possibly a sidebar) that is a "Did you know..?" or FAQ type section that discusses services or products available through SWAMP or answer's common SWAMP questions

6.3 Fact Sheets

Fact sheets will be produced at least annually to showcase regional success stories and projects, SWAMP infrastructure components (e.g., database, quality assurance), and successful integration with other programs/organizations. The graphic design and public relations firms are working with the communications and outreach committee to create a copy draft by Feb. 8, 2006.

The final communications and outreach strategy will outline not only the design, content, and scheduling of fact sheets, but also how the fact sheets will be promoted and assessed.

Example Ideas for Fact Sheets

- A regional fact sheet and a program-wide fact sheet shall be created. May want to create a "mock-up" of both.
- The fact sheet should be a single page, front and back.
- The format should be an electronic fact sheet that is printable.
- The fact sheet should include text with no more than three pictures and a map. The pictures could be graphical representations of the data.
- The title of the fact sheet should be a large banner at the top of the first page.
- The title should stipulate which region is being discussed or if it's a program wide document.
- A date of publication should be near the title, likely the month and year.
- The SWAMP logo should be on both the front and the back of the document.
- A side bar with contact info could be incorporated if someone has further questions regarding the publication.

6.4 Technical Reports

The type and frequency of technical reports will be decided upon after the needs of the SWAMP's target clients are assessed. This section will describe all the SWAMP's technical reports and provide standards and templates. Each report will have an implementation schedule and deadline for public release. It is anticipated that the SWAMP will produce one, comprehensive report biannually. The graphic design and public relations firms are working with the communications and outreach committee to create a copy draft by Feb. 8, 2006.

The final communications and outreach strategy will outline not only the design, content, and scheduling of reports, but also how the reports will be promoted and assessed.

6.5 Report Cards

This section will describe the purpose, content and schedule for SWAMP report cards. The final communications and outreach strategy will outline not only the design, content, and scheduling of report cards, but also how they will be promoted and assessed.

Example Ideas for Report Cards

- Prepare report cards for distribution (annually?)
- Report card should be an electronic file that is also printable
- Title of report card should be a banner across the top, year should be included in title
- Report card should be ½ - 1 page in total length
- The SWAMP logo should be located on the card
- A contact for further information should also be included as should the SWAMP website's URL
- There should be one larger size map centered in the document referring to location(s) being graded

- Letter grades should be large in size as well as be a contrasting color so the grades are highly visible
- A small narrative should be included next to each grade as well as the name of the area that is being discussed. The area names should be clearly visible on the map

6.6 Scientific Publications

One of the SWAMP goals is publication in scientific journals of its data, methods and processes. In the final communications and outreach strategy, this section will a 12-month plan for publication identifying paper topics and preferred journals.

Example tactics for Scientific Publication:

- What new and innovative research occurring?
    - Determine what research is completed or close to completion.
    - Perhaps match prospective topics to varying client needs, alternating between regions.
- What applicable journals are there for monitoring, water quality, etc?
- Should already have a completed list of all applicable journals that relate to surface water monitoring.
- After successful publication, make clients aware of paper
- Put where/what/whom in local papers so people know what exciting research is happening in their area.
- Tie in with other SWAMP communication aspects:
- Poster
- Speak at conference
- Put applicable articles on SWAMP website, maybe divide by region or topic.

6.7 Conferences/Meetings

This section will describe how the SWAMP will utilize conferences and meetings to promote its key messages and deliver the SWAMP products and tactics. All available conferences and meetings will be assessed for usefulness to the SWAMP promotion and reaching target clients. An annual schedule will be developed with associated products for each meeting. For example, if the SWAMP finds it important to have strong presence at a particular conference, what will be present, how and by whom. By developing an annual schedule, the program will also be able to better project travel costs.

This section will specifically address how the upcoming NWQMC booths and promotion will be handled.

The communications and outreach committee feels the SWAMP should host an annual open house at the CalEPA building in Sacramento. Invited guest could include target clients, state legislature representatives, and reporters from local media. Talks would be specifically geared to showcase the SWAMP success stories. Tables of information would be hosted by SWAMP infrastructure groups such as the Data Management Team and the QA Team.

6.8 Web Site

This section will describe how the SWAMP will best use its web page in conjunction with target client needs. The current structure for web access to the SWAMP materials is too dispersed and it is not easy for clients to find the information they need quickly. For example, in web-based communications and outreach it is not recommended for a client to need to through more than two links for the requested information. Currently, the SWAMP client may have to go through four links to get requested information due to a lack of centralization and organization.

Example Ideas for SWAMP Web Site

- Have one location containing all SWAMP information
    - Currently have websites at the SWRCB and CALSTATE

- Communication group should create an online survey for visitors of the website to complete that will determine website's effectiveness. The information gathered from the surveys would be utilized to streamline the contents to users needs. The surveys should ask questions such as:
    - Determine visiting frequency (i.e. first time, one/month, several/month, etc.)
    - Reason for visit, examples
    - SWAMP participant, regulated community
    - QA/QC
    - Database questions
    - Ask how the site was found
    - By a friend/colleague
    - Search engine
    - Newsletters
    - State board website

- Website should contain information regarding SWAMP or information released from SWAMP:
    - Upcoming courses
    - Journal articles written utilizing SWAMP data
    - Access to SWAMP database
    - Step by step SWAMP comparability for:
    - Database
    - QA/QC
    - QAPPs

6.9 Training Classes

This section will describe how the SWAMP will use training classes to meet target client needs and deliver key messages. The current SWAMP training track will be assessed and completely re-designed. It is already known through client feedback that the SWAMP training track is not meeting minimum expectation levels. The SWAMP anticipates delivering training in QA, monitoring design, and data management (i.e., how to be comparable with the MLML SWAMP database).

Example Ideas for Development of Training Track:

- A group (preferably the communications and outreach committee) should create a development plan for all potential classes/trainings that will be held
    - A goal for training track development would be the creation of a classroom series that can be taught by more than one person (i.e., multiple SWAMPers should be trained to teach a certain class).
    - The development plan should include courses to be offered for a variety of different groups, i.e. storm water grant recipients, regional board staff.
- Notices for all classes/trainings will be put on the SWAMP website, sufficient notice should be given so people can plan accordingly.
- The materials for the class will need to be formally reviewed for content by the communications and outreach committee.
- The power point slides, including font, will be consistent with the SWAMP communication plan protocols.
- Potential course subjects:
    - Data Management/Database use
    - QAPP training
    - SWAMP comparability
    - Monitoring Design
    - Data quality assessment (What do I do with my data?)
    - Bioassessment/P-Hab. Comparability

6.10 Local Media Coverage/Press Releases

The SWAMP conducts work that is important and interesting to the residents of California. This section will include tactics for developing press releases to be sent to targeted media sources. Some ideas are articles in local newspapers and radio interviews with key SWAMPers in order to development public recognition of the SWAMP. This section in the final communications and outreach strategy will explain detail steps in order to obtain media coverage of the program.

6.11 Help Desk

The following is an excerpt from a proposal submitted to the SWAMP Coordinator for consideration. This section in the final communications and outreach strategy will outline not only the who, what, why and when of the help desk along with a means for assessing its performance.

From Proposal: California State Legislature calls for the integration of existing state water monitoring activities. As a result, contracts require water monitoring to be Surface Water Ambient Monitoring Program (SWAMP)-comparable. Most groups are not familiar with SWAMP measurement quality objectives, reporting formats and the procedures necessary to be SWAMP-comparable.

Currently there is a lack of guidance or central location for what is required to be SWAMP comparable. Some groups, such as grant recipients, may not have the staff or time to research this information and require a central resource.

The help desk would meet this need by advising groups about procedures necessary to be SWAMP comparable, including resources for SWAMP measurement quality objectives, reporting formats and database inquiries. While much of the information regarding SWAMP comparability is available, it is not currently accessible from one place. The help desk would communicate an image that SWAMP is helpful rather than being something that creates more hurdles or work, basically good customer service.

The help desk line would be operated by a member of the SWAMP Quality Assurance (QA) Team or the SWAMP Data Management Team. The main services the help desk would provide are responses to inquiries regarding general SWAMP comparability and direction to appropriate information sources, including web links, publications and/or individuals. In addition, support will be offered concerning the creation of QA Project Plans, selection of methods, knowledge of SWAMP Measurement Quality Objectives and usage of the database.

6.12 SWAMP Infrastructure Products

6.12.1 MLML SWAMP Database

The following section describes the short and long term goals for the SWAMP Data Management Team. The communications and outreach committee will work with the DMT to match its goals with key messages, target clients, and the SWAMP goals. After a preliminary assessment, it is anticipated that minimal or no modifications will be recommended.

The SWAMP Data Management Team (DMT) has several short and long term goals for management of the State's Surface Water Ambient Monitoring Program's (SWAMP) data and assisting in state-funded programs that are to be SWAMP-comparable (SWAMP umbrella groups). First, the DMT is focusing their effort on two separate but related products for maintaining and improving the data management services. The first product is managing data of known and documented quality and making it accessible to the public via the web. The second focused effort will be to assist in producing applications that will aid the Regional and State Water Quality Control Boards in analyzing their SWAMP data. Also the DMT will continue communicating these products to the multiple data users through trainings, meetings, and literature on the web.

The DMT has short and long term goals for producing data of known and documented quality for both SWAMP and SWAMP-comparable groups. The DMT will continue to manage SWAMP data for the Regional Water Quality Control Boards based on their yearly work plans. The DMT will also be incorporating bioassessment, bioaccumulation, and time series probe data in the same manner as the water, sediment, and discrete probe measurement data are being managed. The DMT's long term goal is to continue developing and documenting these processes so that groups under the SWAMP umbrella can use the same data management tools developed for SWAMP. A major component of data management will be to continue to make the data accessible to the public. Currently data is available on the web through a partnership with Department of Water Resources (DWR) at www.bdat.ca.gov.

The second focus of maintaining and improving the data management effort will involve working with data users to develop applications which will further assist them in analyzing their SWAMP data. The short term goal for this application development effort will be to gather and prioritize the functional requirements necessary. Once these are finished, the DMT will work with partner agencies to make these applications available on the web.

Critical to the DMT's short and long term goals is communicating these products to groups in SWAMP and under the SWAMP umbrella. This includes continuing to train agencies working directly with the SWAMP program (data suppliers, and data users) to work with these new data types. The DMT will continue to host and update the SWAMP Moss Landing Marine Laboratories web site as new information is written or updated (www.mpsl.mlml.calstate.edu/swamp.htm). The DMT will also continue to host a SWAMP Data Management Users Group which meets approximately once a month to discuss SWAMP database usage. If funded, the DMT will work with the Quality Assurance Team (QAT) to maintain a SWAMP help desk to answer data and quality assurance questions for groups under the SWAMP umbrella.

6.12.2 SWAMP Quality Assurance Program

This section will include how QA products and planning are integrate with SWAMP goals, key messages and communications and outreach tactics. Other than the SWAMP training track, it is anticipated that minimal modifications will be made to the existing QA program schedule and focus.

7.0 Implementation Plan

This section will contain the first year implementation schedule. The schedule will be revised at least every quarter. The end of year communications and outreach assessment will include a comparison of the originally planned schedule against completed activities.

8.0 Budget

This section will contain a proposed budget and line item costs for each communications and outreach tactic that is not currently funded through the SWAMP's infrastructure.

9.0 Assessment Plan

This section will contain a step-by-step process for evaluating the performance of the SWAMP's products and each component of the communications and outreach strategy.

10.0 Contact Information

For information on this document, please contact:

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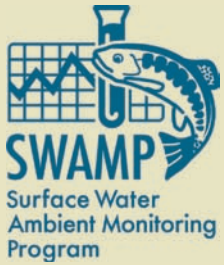

SWAMP Marketing Samples

Contact:

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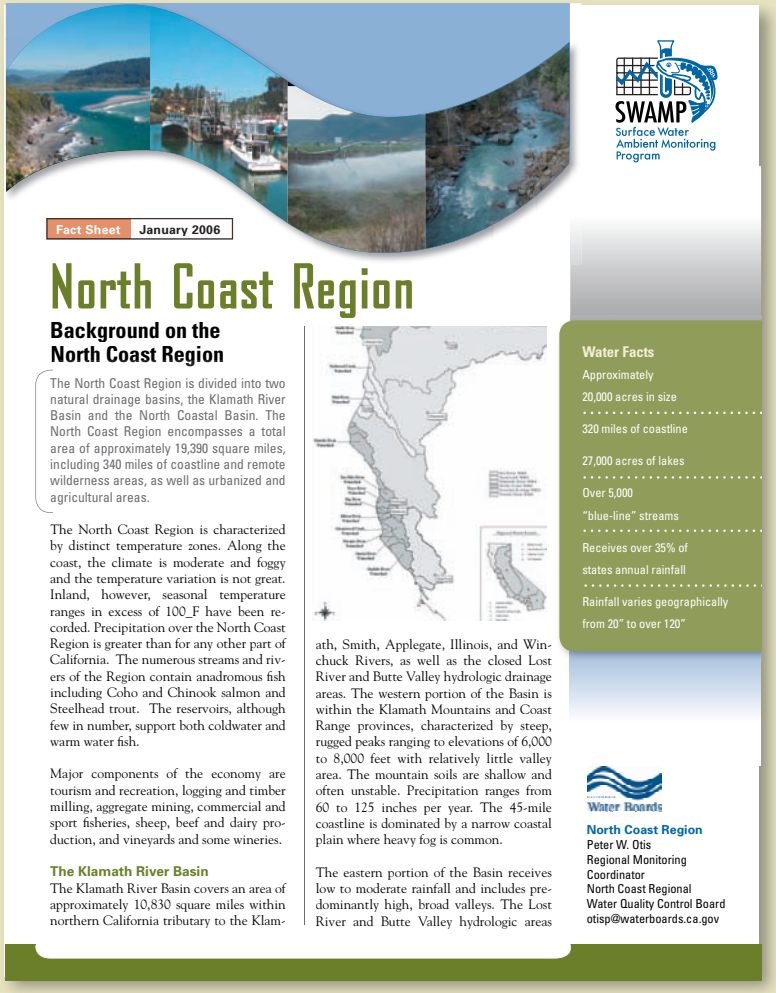
bvanbuuren@mlml.calsate.edu

206-297-1378

February 8, 2006

1.1 SWAMP Marketing Samples: Fact Sheet



Fact Sheet January 2006

North Coast Region

Background on the North Coast Region

The North Coast Region is divided into two natural drainage basins, the Klamath River Basin and the North Coastal Basin. The North Coast Region encompasses a total area of approximately 19,390 square miles, including 340 miles of coastline and remote wilderness areas, as well as urbanized and agricultural areas.

The North Coast Region is characterized by distinct temperature zones. Along the coast, the climate is moderate and foggy and the temperature variation is not great. Inland, however, seasonal temperature ranges in excess of 100_F have been recorded. Precipitation over the North Coast Region is greater than for any other part of California. The numerous streams and rivers of the Region contain anadromous fish including Coho and Chinook salmon and Steelhead trout. The reservoirs, although few in number, support both coldwater and warm water fish.

Major components of the economy are tourism and recreation, logging and timber milling, aggregate mining, commercial and sport fisheries, sheep, beef and dairy production, and vineyards and some wineries.

The Klamath River Basin

The Klamath River Basin covers an area of approximately 10,830 square miles within northern California tributary to the Klamath, Smith, Applegate, Illinois, and Winchuck Rivers, as well as the closed Lost River and Butte Valley hydrologic drainage areas. The western portion of the Basin is within the Klamath Mountains and Coast Range provinces, characterized by steep, rugged peaks ranging to elevations of 6,000 to 8,000 feet with relatively little valley area. The mountain soils are shallow and often unstable. Precipitation ranges from 60 to 125 inches per year. The 45-mile coastline is dominated by a narrow coastal plain where heavy fog is common.

The eastern portion of the Basin receives low to moderate rainfall and includes predominantly high, broad valleys. The Lost River and Butte Valley hydrologic areas

Water Facts

Approximately 20,000 acres in size

320 miles of coastline

27,000 acres of lakes

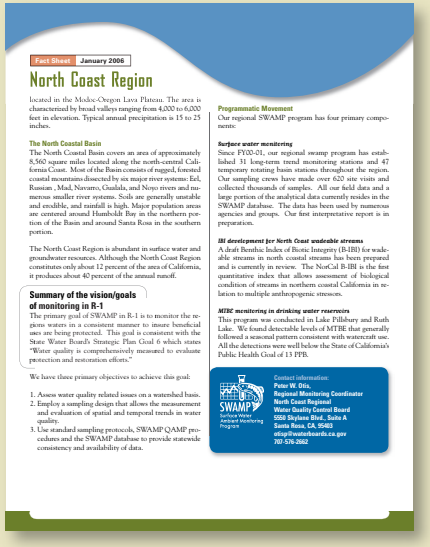
Over 5,000 "blue-line" streams

Receives over 35% of states annual rainfall

Rainfall varies geographically from 20" to over 120"

North Coast Region
Peter W. Otis
Regional Monitoring Coordinator
North Coast Regional Water Quality Control Board
otisp@waterboards.ca.gov

Front



Fact Sheet January 2006

North Coast Region

located in the Modoc-Oregon Lava Plateau. The area is characterized by broad valleys ranging from 4,000 to 6,000 feet in elevation. Typical annual precipitation is 15 to 25 inches.

The North Coastal Basin

The North Coastal Basin covers an area of approximately 8,560 square miles located along the north-central California Coast. Most of the Basin consists of rugged, forested coastal mountains dissected by six major river systems: Eel, Russian , Mad, Navarro, Gualala, and Noyo rivers and numerous smaller river systems. Soils are generally unstable and erodible, and rainfall is high. Major population areas are centered around Humboldt Bay in the northern portion of the Basin and around Santa Rosa in the southern portion.

The North Coast Region is abundant in surface water and groundwater resources. Although the North Coast Region constitutes only about 12 percent of the area of California, it produces about 40 percent of the annual runoff.

Summary of the vision/goals of monitoring in R-1

The primary goal of SWAMP in R-1 is to monitor the regions waters in a consistent manner to insure beneficial uses are being protected. This goal is consistent with the State Water Board's Strategic Plan Goal 6 which states "Water quality is comprehensively measured to evaluate protection and restoration efforts."

We have three primary objectives to achieve this goal:

1. Assess water quality related issues on a watershed basis.
2. Employ a sampling design that allows the measurement and evaluation of spatial and temporal trends in water quality.
3. Use standard sampling protocols, SWAMP QAMP procedures and the SWAMP database to provide statewide consistency and availability of data.

Programmatic Movement

Our regional SWAMP program has four primary components:

Surface water monitoring

Since FY00-01, our regional swamp program has established 31 long-term trend monitoring stations and 47 temporary rotating basin stations throughout the region. Our sampling crews have made over 620 site visits and collected thousands of samples. All our field data and a large portion of the analytical data currently resides in the SWAMP database. The data has been used by numerous agencies and groups. Our first interpretative report is in preparation.

Ibi development for North Coast wadeable streams

A draft Benthic Index of Biotic Integrity (B-IBI) for wadeable streams in north coastal streams has been prepared and is currently in review. The NorCal B-IBI is the first quantitative index that allows assessment of biological condition of streams in northern coastal California in relation to multiple anthropogenic stressors.

MTBE monitoring in drinking water reservoirs

This program was conducted in Lake Pillsbury and Ruth Lake. We found detectable levels of MTBE that generally followed a seasonal pattern consistent with watercraft use. All the detections were well below the State of California's Public Health Goal of 13 PPB.

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Back

SWAMP
Surface Water Ambient Monitoring Program

Fact Sheets

Fact sheets will be produced at least annually to showcase regional success stories and projects, SWAMP infrastructure components (e.g., database, quality assurance), and successful integration with other programs/organizations. The final marketing strategy will outline not only the design, content, and scheduling of fact sheets, but also how the fact sheets will be promoted and assessed.

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- A date of publication should be near the title, likely the month and year.
- The SWAMP logo should be on both the front and the back of the document.
- A side bar with contact info could be incorporated if someone has further questions regarding the publication.

Contact:
Beverly H. van Buuren
bvanbuuren@mlml.calsate.edu
206-297-1378

1.2 SWAMP Marketing Samples: Newsletter

In this ISSUE:

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Spring 2006

THE SWAMP Monitor

April 8
Shoeld Condimentum
San Diego, CA

July 10
Filer Dimentum
San Francisco, CA

August 22
Benolder Menning
San Luis Obispo, CA

SWAMP
Surface Water Ambient Monitoring Program

CONTACT SWAMP:

Beverly H. van Buuren
bvanbuuren@mlml.calstate.edu
206-297-1378
www.SWAMP.org

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www.SWAMP.org

Front Page

Nulla Lacus

Etiam sit Amet Dacus

Tid Bytes

Sample Inside Page

SWAMP
Surface Water Ambient Monitoring Program

Newsletters

Example Ideas for Newsletter:

- Newsletter will be produced quarterly (possibly monthly depending on content)
- The format will be an electronic newsletter that is printable
- The title and date of the newsletter should be included at the top of the first page
- There should be a side bar on the first page that highlights what is included in the particular issue.
- A calendar of upcoming meetings and events should be included
- Must be clearly tied to key messages, target clients, and SWAMP goals
- 3-4 pictures related to articles could be incorporated; graphs may also be needed depending on the article.
- The articles will profile regional success stories, region-specific utilization of SWAMP, profile new and innovative research, interviews with public officials or legislators, etc.
- There should be a regular section (possibly a sidebar) that includes updates on items such as the database
- There should be a regular section (possibly a sidebar) that is a "Did you know..?" or FAQ type section that discusses services or products available through SWAMP or answer's common SWAMP questions

Contact:
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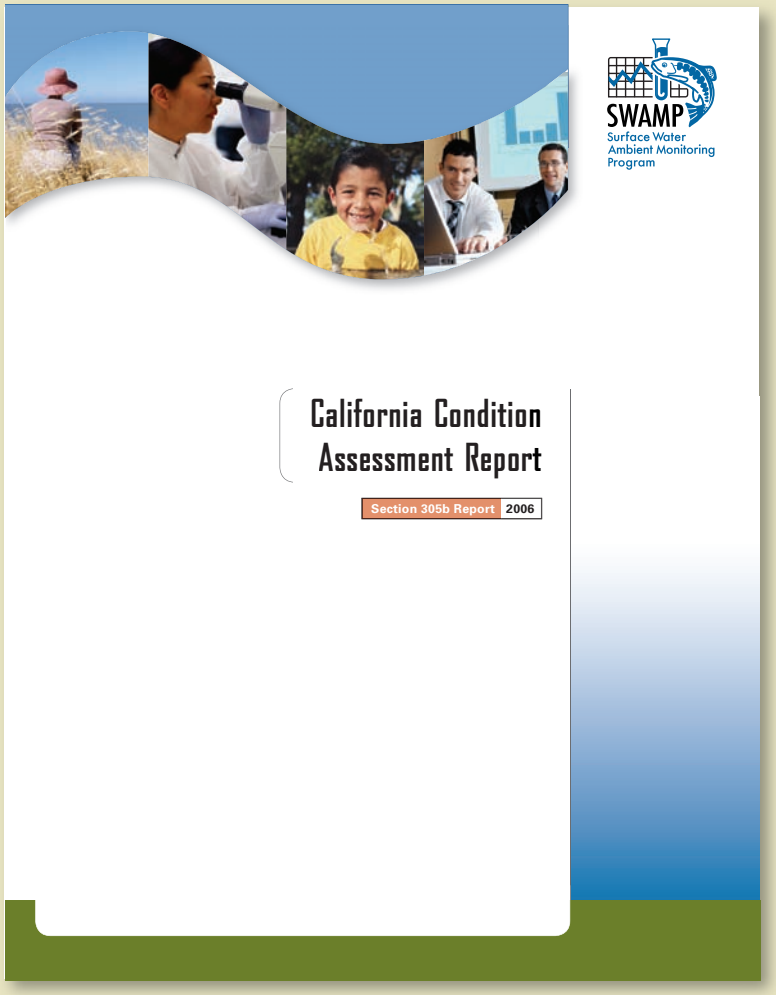
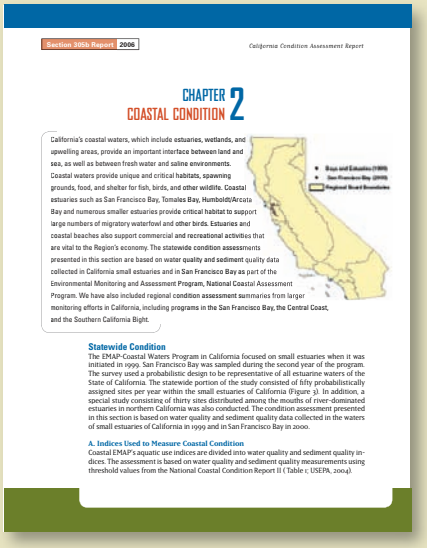
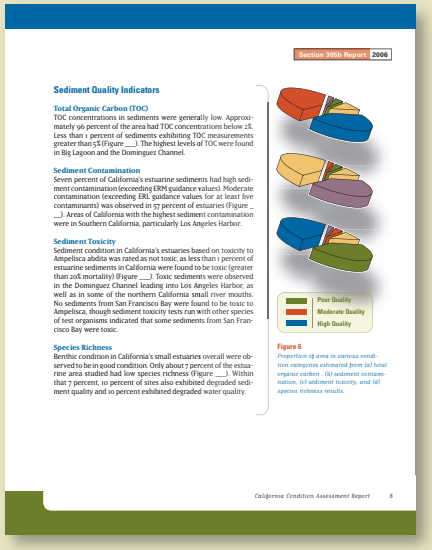
1.3 SWAMP Marketing Samples: Technical Report



Cover



Chapter Page



Interior Page

SWAMP
Surface Water
Ambient Monitoring
Program

Basic Report Format

- The report will be produced on an annual basis.
- Should the report be both email and print friendly??
- The report should include a title page with the SWAMP Logo, title of the report, name of group producing the report and the date.
- The report should include a table of contents.
- The footer should include the name of the document, the date, and pg # of #.
- A few tables and graphs will be included within the report.
- Must have graphics the easily display trends, report card style graphics (i.e., grading system) may also be included
- Include photos.

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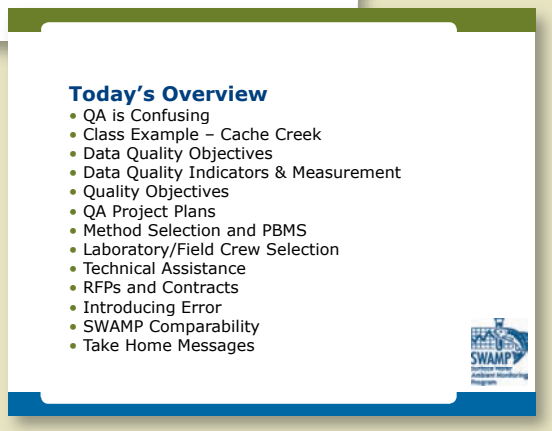
1.4 SWAMP Marketing Samples: PowerPoint Presentation

Title Page



Slide Sample

SWAMP
Surface Water
Ambient Monitoring
Program

Power Point Presentation Template

- Must be very easy to read (colors and fonts)
- Cover page (e.g., title, presenters' names, meeting and location, date) include SWAMP logo
- Each slide should be numbered and include SWAMP logo
- Consider how the presentation will print

Contact:
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206-297-1378

Improving the Decision-making, Management, and Scientific Review Structure of the Surface Water Ambient Monitoring Program

Contact: Rainer Hoenicke
San Francisco Estuary Institute
February 10, 2006

Table of Contents

1. Preface
2. Executive Summary
3. Reorganization Objectives
4. Current Situation
   - 4.1 Key Concerns about Decision-making Process
   - 4.2 Program Stakeholders
5. Opportunities
   - 5.1 Target Stakeholders
   - 5.2 Three Levels of Program Decisions
6. Revised Roles of SWAMP
7. Implementing Improvements to the Technical Review and Organizational Structure
   - 7.1 Proposed Organizational Structure and Functions
   - 7.2 Workplan Tasks

1.0 Preface

The State Water Resources Control Board introduced the Surface Water Ambient Monitoring Program in 2001 to meet Clean Water Act requirements and provide comprehensive information about the status of, and trends in, beneficial uses of California's surface waters. Beyond meeting federal reporting requirements, SWAMP is also responsible for gathering water quality information to support government agencies, watershed stewardship organizations, and the public at large to improve decisions about water resource management. Furthermore, ambient monitoring information is designed to assist in evaluation and reporting the outcomes of tax-payer supported investments in the protection and restoration of watershed processes, functions, and valued natural resources. Monitoring is necessary to assess whether the goals expressed in the federal Clean Water Act and the California Water Code are being met and if not, whether policies and management actions designed to restore beneficial uses are doing so.

Program management recognized the need to obtain external review of SWAMP and convened a Scientific Planning and Review Committee (SPARC) in 2005. This external review committee held a workshop in late 2005 and generated draft recommendations for how to improve the program. The recommendations, based on the following findings of the SPARC, provided the impetus for drafting this Strategy.

- *The SWAMP does not take advantage of available resources and existing programs.*
- *Decision-making and prioritization processes are inadequate for the challenges facing the SWAMP.*

2.0 Executive Summary

This document is a proposed strategy with accompanying work plan for organizing SWAMP in a way that develops stronger connections with other local, regional, and state programs; seeks extramural advice and evaluation frequently; and improves decision-making and prioritization processes that are adequate for the challenges facing the program. It is intended as a roadmap for improving program governance, evaluation, and review and to integrate recommendations pertaining to adjustments in program goals and improvements to monitoring approaches, communication and reporting. Without clearly defined mechanisms in place for making decisions, review and advice cannot be adequately considered and acted upon.

3.0 Objectives of the Strategy

- Identify means to develop strong connections with other local, regional, and state programs.
- Develop mechanisms for frequent extramural advice and evaluation.
- Build on the rich history of monitoring and assessment programs elsewhere.
- Revise existing management structure and decision-making and align it more closely with new program goals and approaches.

4.0 Current Situation

4.1 Key Concerns about Decision-making Processes

- The program lacks a formal infrastructure and processes to develop a statewide strategy and align the regions toward common program goals.
- The program lacks policies and program direction when consensus-based decision-making breaks down.
- The program's creativity, healthy opportunism, and the regional coordinators' ability to work independently are valuable traits that should be protected, but they are inadequate for the program to have a more substantive impact, both at the state, as well as the regional and local levels.
- No formal review process exists for evaluating if special studies and pilot projects are on track to achieve their goals, and little outside expertise and experience is brought in.
- No systematic program-level approach exists to take advantage of large-scale monitoring efforts, and no infrastructure is readily discernible for collaboration, coordination, and integration with other monitoring programs and diffusion of ideas and insights.

4.2 Program Stakeholders

As an integral part of "Adaptive Management," SWAMP is envisioned to provide information about water body condition throughout the state to enable program managers and policy-makers to adjust and improve their responses to undesirable conditions and trends in beneficial uses. After the passage of the most recent Bond Acts, SWAMP was also designated as the recipient and place of analysis and integration of monitoring data generated via grants to watershed stewardship organizations, government, and academic institutions (albeit without the necessary funding to effectively do so) and place of technical support to insure data comparability. Stakeholders of the program therefore include not only the nine Regional Water Boards and the State Board, but also public and private entities regulated under the Clean Water Act and the California Water Code, grant recipients, and the tax-paying public as a whole. At this time, no formal mechanism exists for the various stakeholder groups to participate other than through Water Board-sponsored workshops and public hearings.

Shortly after passage of Assembly Bill 982, the State Water Resources Control Board formed a Public Advisory Group (AB 982 PAG) that was comprised of a broad range of stakeholders comprised of the regulated community and environmental interest groups. This advisory group was formed to assist in the evaluation of program structure and effectiveness in matters related to the implementation of Clean Water Act section 303(d) requirements and other applicable regulations, as well as other monitoring and assessment programs. The PAG has not met since July 2003.

5. Opportunities

5.1 Target Stakeholders

The Surface Water Ambient Monitoring Program has recently identified six groups of "clients," which also could be defined as stakeholders in the program's success, its direction, and relevance. They are:

- U.S. Environmental Protection Agency (US EPA)
- State Water Resources Control Board and staff
- Regional Water Quality Control Boards and staff
- Regulated Community
- Environmental Interest Groups
- Grant Recipients

An additional group of stakeholders could be defined as natural resource and human health trustee agencies and organizations that generate their own information relevant to addressing SWAMP objectives. All of these stakeholder groups are both potential information users of, and information contributors to, SWAMP and have an interest in helping shape decisions at three general levels of program detail outlined below.

5.2 Three Levels of Program Decisions

Program decisions tend to happen on three general levels:

1) Evaluation and periodic adjustments to program goals and the associated assessment questions designed to inform management decisions.
2) Prioritization of annual work plan priorities and thus translating an overall monitoring strategy into concrete milestones.
3) Working out the technical and scientific details to keep the program relevant.

While each level requires different advice and review functions, and different kinds of decisions and expertise, this does not imply that three separate decision structures are needed.

6.0 Revised Roles of SWAMP

The existing SWAMP management team has begun to obtain feedback from stakeholders/clients on how SPARC recommendations might best be implemented. A picture is emerging about how review and advice, as well as decision-making processes need to be improved:

- Sufficient leadership and authority need to be invested in the SWAMP management team to align the regions toward common goals and to provide program direction in cases when consensus-based decisions cannot be obtained.
- Roles and responsibilities need to be clearly defined for all three decision levels in terms of how decisions are arrived at, what advice and review functions need to be filled by various stakeholder and expertise categories, and how decisions are documented and communicated.

- Initiative, creativity, and flexibility are important features for SWAMP to retain and enhance responses to emerging issues.

Four key roles of SWAMP have been identified. These are: (1) to take advantage of existing monitoring programs and to coordinate with them; (2) to conduct monitoring and assessment activities in areas where other monitoring programs do not generate information relevant to SWAMP; (3) to provide consistent guidance on data collection, analysis, and assessment at the local, regional, and state levels; and (4) to represent the place where all Water Board programs (TMDL, Waiver, NPDES, 401, etc.) obtain the necessary information to assess program effectiveness in terms of environmental outcomes.

7.0 Implementing Improvements to the Technical Review and Organizational Structure – Proposed Work Plan

7.1 Proposed Organizational Structure and Functions

Figure 1 below suggests what kind of organizational structure might be required to insure SWAMP is an effective and integral part of performance-based management. The accompanying legend details proposed technical and scientific review and programmatic decision-making mechanisms and how to enhance visibility and relevance of SWAMP to Water Board programs (both within the State Board and among Regional Boards) and provide consistency among Regions through a statewide assessment framework. The proposed organizational structure shows in concrete terms what kind of human resources are needed for coordination, collaboration, and communication to implement key SPARC recommendations.

Figure 1

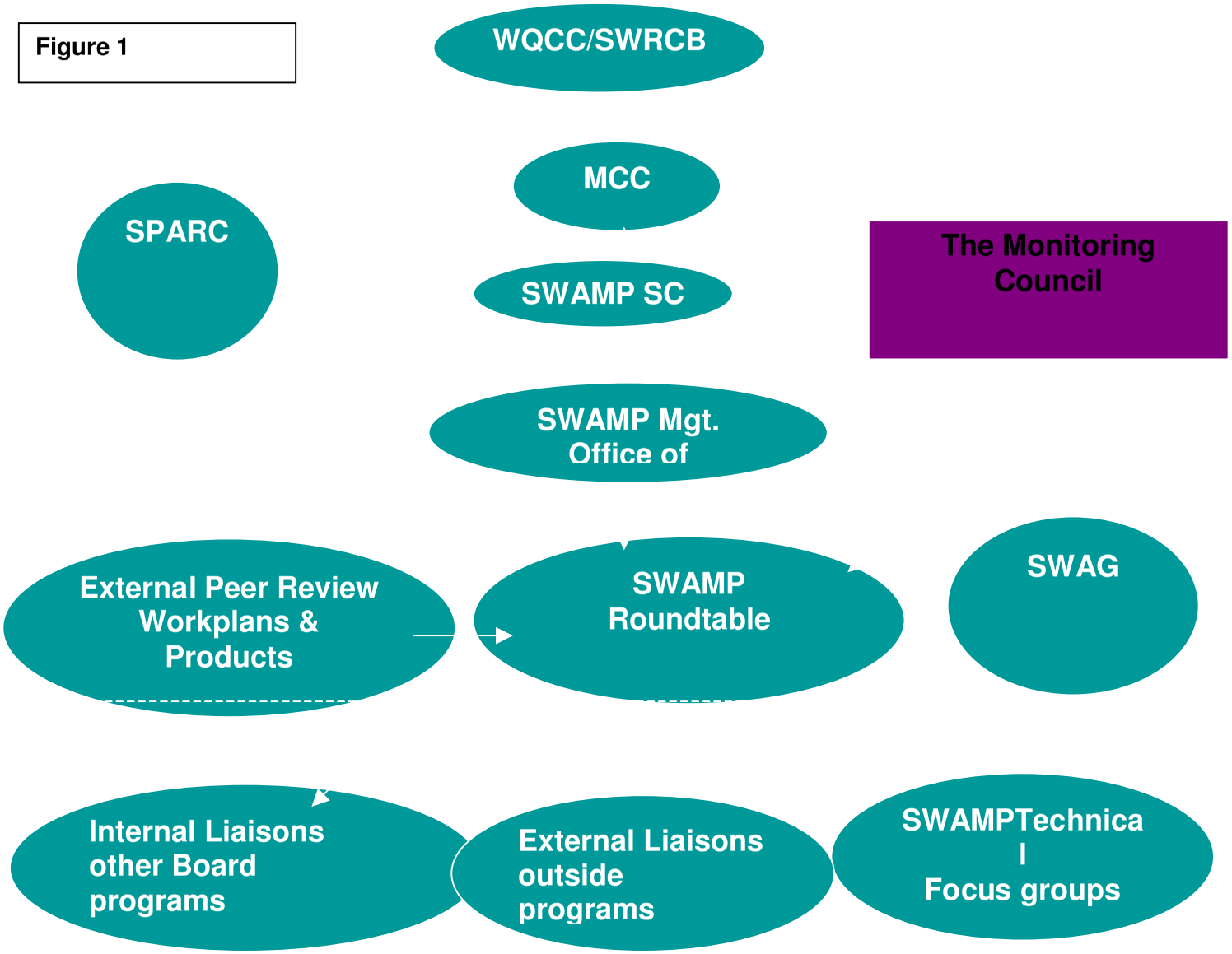

WQCC/SWRCB
MCC
SPARC
SWAMP SC
The Monitoring Council
SWAMP Mgt. Office of
External Peer Review Workplans & Products
SWAMP Roundtable
SWAG
Internal Liaisons other Board programs
External Liaisons outside programs
SWAMPTechnical Focus groups

Figure 1 Legend:

WQCC: Water Quality Coordinating Committee – Regional and State Board members setting high-level WQ policy priorities.

MCC: Management Coordination Committee – Executive Staff from SWRCB and Regions. Meet to address SPARC recommendations, set general direction and goals for SWAMP. Assist SC, if needed, to respond to legislative requests, justify budgets, and convey performance goals accomplishments.

New - *SWAMP SC*: Steering Committee, comprised of EOs, Section Chiefs that manage programs (e.g., TMDL, Ag. Waivers, NPS, NPDES, 401 Cert.), and selected tech staff (*ad hoc*). Committee reviews and endorses SWAMP RT and SWAMP Mgt. recommendations on annual goals, priorities, and work plan content within the context of the statewide Surface Water Monitoring Strategy. Works with SWAMP manager and Office of Research to identify statewide needs and evaluate how regional priorities match. Endorses and champions budget change proposals, communicates with legislative staff, and evaluates funding options and program shifts based on resource allocations. Elevates SWAMP visibility, causes alignment of Regional Board and State Board program activities based on SWAMP information. Carries new initiatives to MCC, legislature, EPA Water Division Chief, and Deputy Directors implementing Watershed MoU.

SWAMP Manager: Directs day-to-day operations and insures alignment of program activities between State Board and Regional Boards. Manages Steering Committee, conveys critical information to EOs, Division Chiefs, Section Chiefs, and others.

SWAMP Roundtable: Day-to-day coordination of monitoring, communication, tech transfer, and collaborative activities among Regions and SWAMP HQ. Adjustments of work plans, alignment of communication messages, development of new initiatives, products and tools. **New:** Deliberate and targeted interaction and communication with Surface Water Advisory Group (*ad hoc)* comprised of broad stakeholder representation. Identification and encouragement (action alerts) of stakeholder input at SWAMP SC and MCC level. Development of annual advice and review schedule, planning and implementation of communication and reporting venues, such as the SWAMP Annual Meeting, web site and newsletter content, etc. – all in consultation with the appropriate subset of SWAG.

New: *SWAG:* Surface Water Advisory Group, comprised of a broad range of information users and information generators (clients). SWAG identifies local and regional information priorities and carries them to SWAMP RT for consideration and formulation of initiatives. SWAG endorses and provides the broad-based support of budgets, priorities, and leverage of other programs.

New: *External Review Group*, comprised of recognized scientific and technical experts from “client”/stakeholder groups and academia. The ERG reviews and provides feedback on work plan content, and helps identify appropriate means of implementing studies (competitive bidding, directed action).

Technical Focus Groups, comprised of RT members and appropriate ERG participants with specific expertise in areas of bioassessment, data management, monitoring design, method development, pollutant transport and fate modeling, exposure and effects identification, etc. Focus Groups participate in development of RFPs for special and pilot studies and evaluate and improve proposals and scopes of work.

New: *Internal Program Liaisons* are SWAMP staff capable of interfacing with Water Board program managers and their staff to identify critical decision points as new information is released that has policy implications (e.g. de-listing, need for site-specific objective development, adjustments in water diversion permitting, wetland and riparian habitat protection policies, etc.)

New: *External Program Liaisons* can be the same staff as Internal Liaisons. They need to interface with the 17 departments implementing the Framework for Protecting California's Watersheds and the CalEPA and Resources Agency representatives to participate in updates to EPIC and communicate pertinent SWAMP information to higher levels.

SPARC: Scientific Planning and Review Committee is a blue-ribbon panel of experts at the interface of science, management, and policy, charged with reviewing programmatic goals, relevance, accomplishments and challenges of SWAMP on a three- to five-year cycle. The SPARC reports to the MCC and interacts with the SWAMP Roundtable.

New: *The Monitoring Council* is a proposed external coordination body comprised of high-level managers from the departments implementing the Joint Agency Framework for Protecting California's Watersheds.

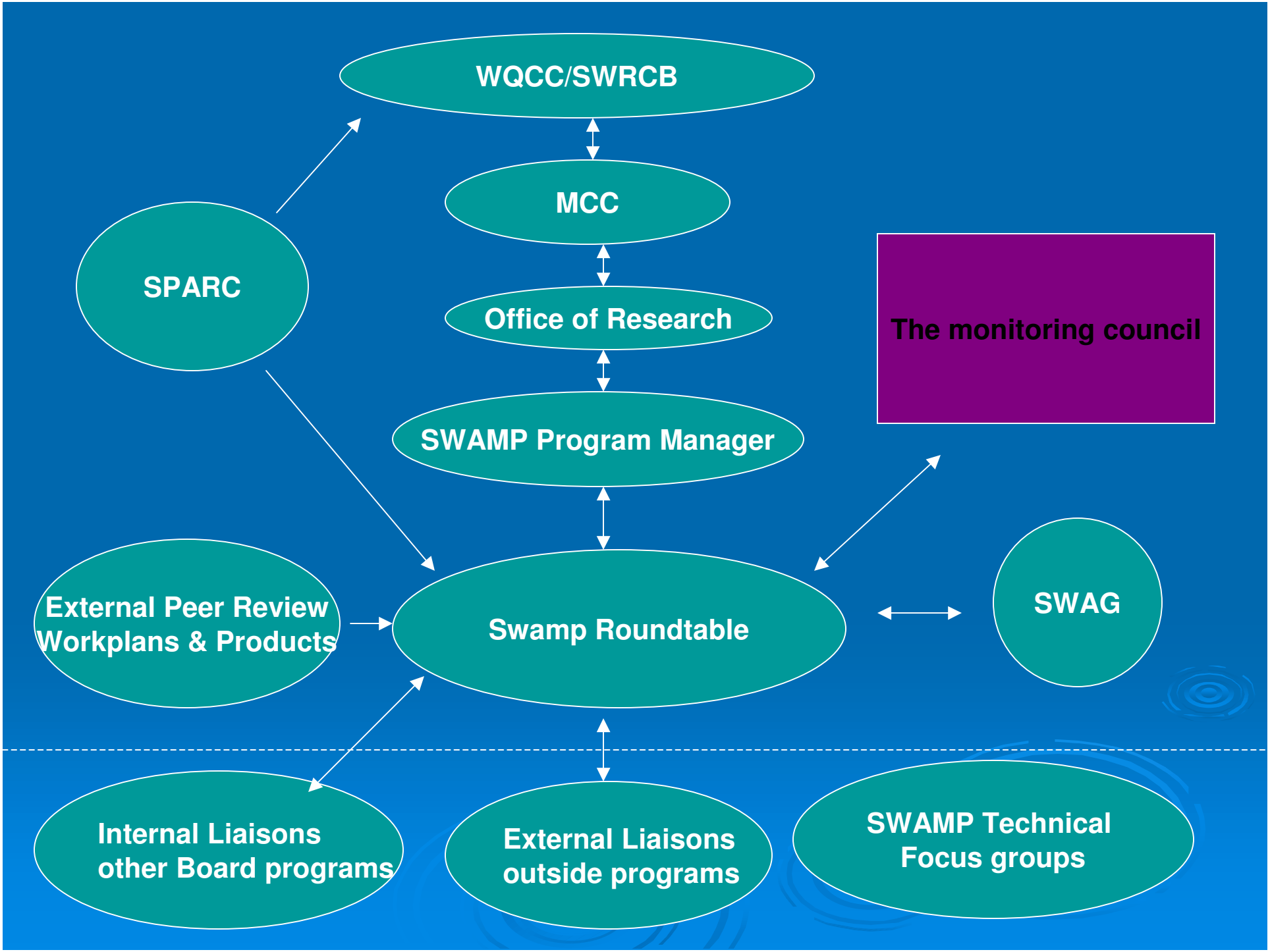
7.2 Work Plan Tasks

Task 1: Document the annual decision-making cycle in terms of budget planning, tentative work plan development in "menu" format based on the Governor's "May Revise," committee and workgroup involvement and review steps, final work plan submittal and sign-off, external scientific product review, and communication, coordination, and cooperation activities with information users and generators.
Timeline: April-May 2006
Resources required: None. Part of existing support contract with SFEI.
Deliverable: Report on SWAMP Planning and Decision-Making Cycle –Roles and Responsibilities of Committees and Program Managers and Implementers.

Task 2: Identify potential members of advisory committees and obtain agreement from Water Board management on proposed initial organizational structure.
Timeline: May 2006
Resources required: None

Task 3: Test the initial organizational structure beginning with the FY 2006/07 planning cycle, schedule and convene advisory and review meetings through 2007/08.
Timeline: June 2006-June 2008
Resources required: 2 PYs

Task 4: Evaluate initial organizational structure and identify improvements. After two years, it will become apparent to what extent SWAMP's information "clients" have engaged and participated in its planning and implementation activities, and whether the SWAMP Steering Committee, Advisory Group, and external science review and focus groups were capable of fulfilling their envisioned roles.
Timeline: April-May 2008
Resources required: Within existing staff resources.


WQCC/SWRCB
MCC
SPARC
Office of Research
The monitoring council
SWAMP Program Manager
External Peer Review
Workplans & Products
Swamp Roundtable
SWAG
Internal Liaisons
other Board programs
External Liaisons
outside programs
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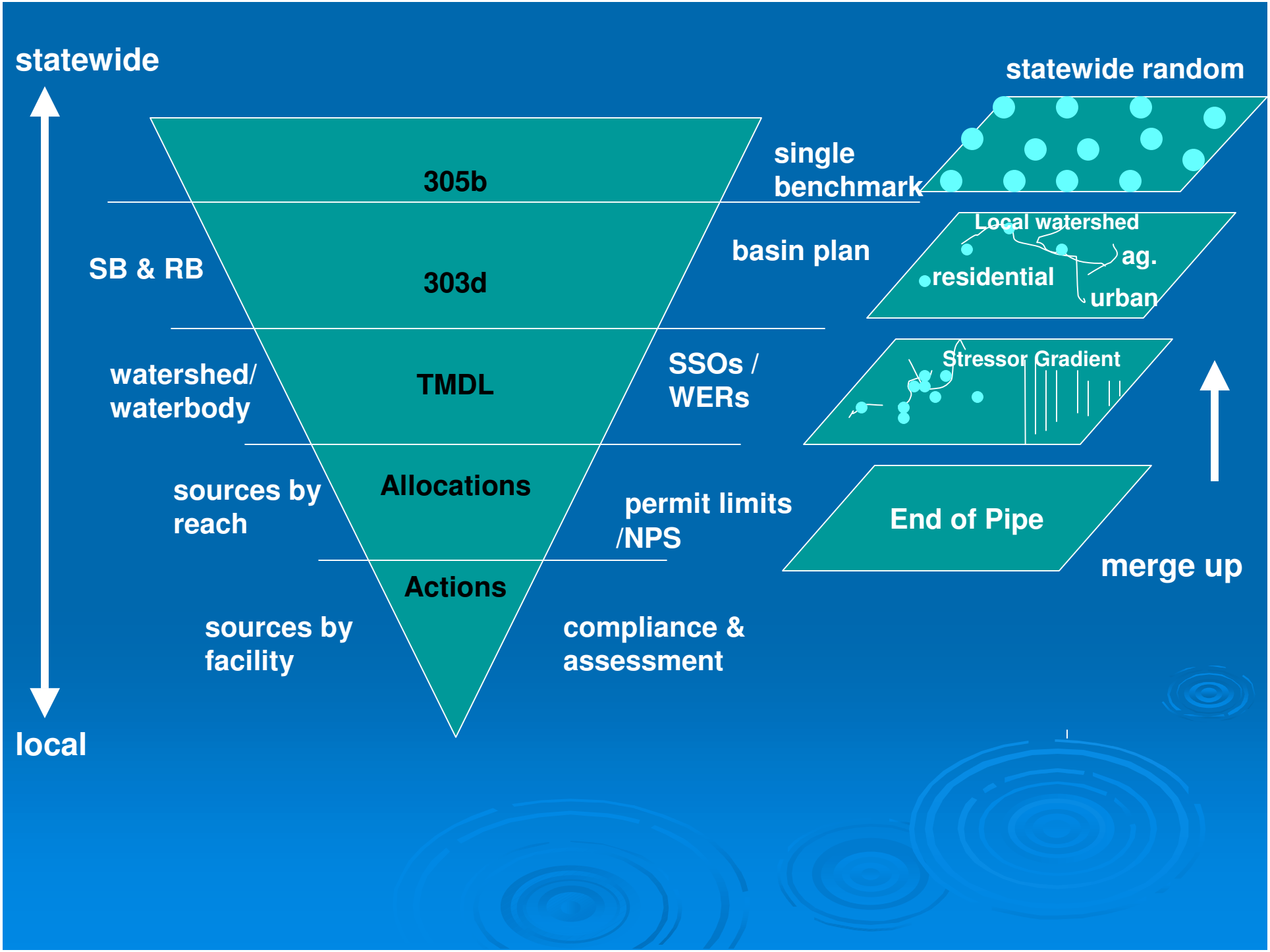
Focus groups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